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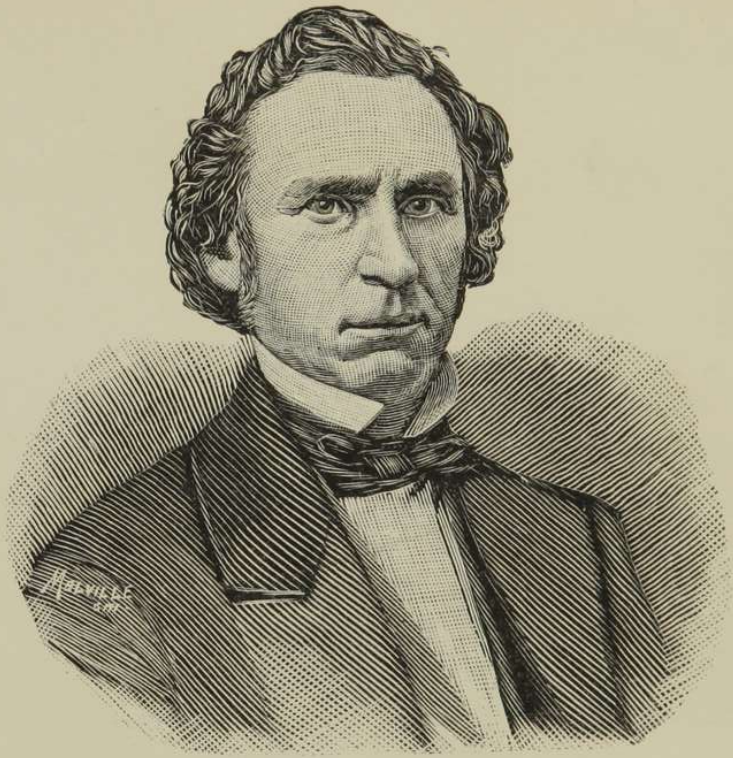

J. C. Gunn M. D. Johnson H. Jordan - M. D.

Latest Family Physician. 214th Edition.

GUNN AND JORDAN'S
NEWEST REVISED PHYSICIAN;

BEING THE FIRST

NEW DOMESTIC PHYSICIAN,

OR,

HOME BOOK OF HEALTH;

BY

JOHN C. GUNN, M. D.,

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WITH SIMPLE AND EFFECTIVE REMEDIES TAKEN LARGELY FROM THE

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——AND THE MANAGEMENT OF THE SICK ROOM; LIKEWISE SEPARATE TREATISES ON——

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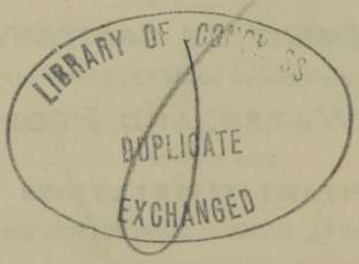

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DR. "GUNN'S

[First] DOMESTIC PHYSICIAN;"

AND

"HOME BOOK OF HEALTH."

WAS COMPLETELY COPYRIGHTED ORIGINALLY ON THE SAME DAY WITH THE

"Anatomy, Physiology and Laws of Health;"

By J. H. JORDAN, M. D.

Physician to the Cincinnati Cholera Hospital in 1849.

THE TWO WERE PUBLISHED TOGETHER, AND WITHIN TWO MONTHS FOLLOWING THE COPYRIGHT ON

"ADDITIONAL DISEASES,"

BY THE LATTER AUTHOR, WAS ISSUED, BOTH HAVE FORMED A PART OF THE

"HOME BOOK OF HEALTH"

CONTINUOUSLY, AND UNDER THE RENEWED COPYRIGHT ARE TO REMAIN A PORTION OF THE PRESENT WORK,

"GUNN & JORDAN'S REVISED PHYSICIAN."

CHICAGO:

SEE PREVIOUS TITLE PAGE.

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Dr. Gunn's work was first issued as "Gunn's New Domestic Physician, or Home Book of Health," the title was originated and written by the person whose name is given at the head of this page; upon the same date was also copyrighted complete, and published at Cincinnati, in the same volume, an appendix, under the title,

"ANATOMY, PHYSIOLOGY,

AND THE

LAWS OF HEALTH.

By J. H. JORDAN, M. D.

PHYSICIAN TO THE CINCINNATI CHOLERA HOSPITAL IN 1849."

From its publication, originally, until the present time, this has formed a part of the volume which has become so popular and widely known as *Gunn's Family Physician and Home Book of Health*, and complying with the copyright statute governing the case, it has been re-entered by its author for renewal of copyright.

Copyright 1885, by Johnson H. Jordan, M. D.

In connection with the above, there was published a Supplement to what Dr. Gunn had written for the same volume, the same being entered for copyright soon after, with the title

"Additional Diseases Described and Treated.

By J. H. JORDAN, M. D.

PHYSICIAN TO THE CINCINNATI CHOLERA HOSPITAL IN 1849."

This filled very nearly one hundred of the octavo pages, not counting the index matter, and covered some seventy to eighty important items, continuously published in the volume until now, when it has become necessary for the author to renew the copyright.

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PREFACE TO

GUNN AND JORDAN'S REVISED PHYSICIAN.

SINCE the appearance of this,—the second family work, originating with Dr. John C. Gunn,—the volume has had the attention steadily of the one who obtained the work for publication from the author. He has constantly felt solicitous that it should be kept well up to the demands of progressive intelligence among the people for whom it was written, and to this end, when Dr. Gunn ceased to bestow labor upon it, Dr. Johnson H. Jordan, closely associated with him, began to write. During the six years following he had written upon over one hundred and sixty diseases and ailments, mostly not touched upon at first. Beside these, Dr. Jordan wrote the parts on ANATOMY, PHYSIOLOGY AND THE LAWS OF HEALTH and on the VEGETABLE MATERIA MEDICA, and also prepared the GLOSSARY, the MEDICAL RECEIPTS, and the article on NURSING THE SICK, etc.

In the re-stereotyping which soon followed the improvements thus made, there was adopted from the German edition, the scientific classification of diseases, by Dr. Charles Alfred Rodin, used in his translation of the improved book; and various verbal inaccuracies in the "Essays on the Passions" were corrected, which had previously escaped notice.

Doubtless very much of the unrivalled favor which has attended the circulation of the volume and made it so generally acceptable and useful, can justly be attributed to the care thus taken, to perfect it on all practical points.

The revision made three years since—see the preface of '83—was the first that touched the medical part, or changed it, for a series of years: what was then done, has been so well received that further endeavors are now seen in the same direction, which bring in from the pens of Physicians who are daily engaged in battling with disease much fresh material which will be found interesting and very suggestive, respecting,

Liver Diseases,	Jaundice,	Catarrh,
Constipation,	Piles,	Colds,
Pleurisy,	Bronchitis,	Consumption,
The Kidneys,	Bright's Disease,	Diabetes,
The Ear,	The Eye,	The Brain,
Nervous Exhaustion,	Nervous Affections,	Neuralgia,
Asthma,	Catalepsy,	Ague and Fever,
Rheumatism	Dengue, or	Breakbone Fever,
Inflammatory Fever,	Scarlet Fever,	Cholera,
Rabies,	Poisons,	Chloralism,
Insomnia,	Chilblains,	Turkish Baths,
Athletic Strain,	Heat Cure,	Hot Water Cure,
Foods for	Childhood, Youth,	Manhood and Age, etc., etc.

All the book has been looked to, but special attention has been given to a revision of the older medical articles and the preparation of new treatises by competent hands. It may fairly be claimed that herein will be found the wisdom of the past and the advanced science of the present for the joy and rejoicing of all, not forgetting many intelligent members of the medical fraternity who have found the work serviceable to themselves and essentially valuable to the people.

CHICAGO, 1886.

PREFACE.

IN the present revision of "*Gunn's Newest Family Physician*," special attention has been given to improving the portions which treat of the Diseases of the Human System. In its earlier revisions, "*The Home Book of Health*" received many interesting contributions from various well known Medical Professors, who readily consented to supply needed articles to perfect the volume; these met the approval of Dr. Gunn, and at the same time he expressed his obligations "to the public for the very kind and liberal patronage bestowed on my (his) NEW DOMESTIC PHYSICIAN, OR HOME BOOK OF HEALTH," and commended the work, "in its enlarged and greatly improved form, to the attention and patronage of a discriminating public." He had printed in the first edition of his "*New Domestic Physician*" the opinions of a number of eminent medical teachers,—as to the merits of his book,—who were Professors at Cincinnati, Louisville, and St. Louis.

The later stereotyped editions of this "book of health" were more methodically arranged, and were enlarged in the departments, not strictly medical, but rather in those devoted to Hygiene and to Physical and Sanitary Science, and also to some other points of Domestic interest. These varied features have made the volume a valuable one for ready reference, and it can be found in the hands of all classes of intelligent Medical Practitioners, and among the people scattered over the broad Continent of America and beyond. Wherever the English language is spoken it is used, and is immensely acceptable and popular with people of all conditions and convictions, as to forms of Medical Practice.

It has been translated and is published in German, under the title, "GUNN'S NEUER HAUSARZT, ODER HAND-BUCH DER GESUNDHEIT,"—in royal octavo. The publishers have disposed of some 30,000 copies in that language.

In January, 1883, the *Chicago Inter-Ocean*, by its literary editor, Dr. O. W. Nixon, Surgeon of the 39th O. V. I. during the war, gave the following view of "*Gunn's Newest*," as then before the public:

"Dr. Gunn has taught hundreds of thousands in American households the value of the simplest information in regard to Nursing the Sick and observing the varying symptoms of a disease, by knowing of which the careful physician is helped in his treatment, and the weary and sick one is better served in his hours of weakness. It is seldom that a writer has, like Dr. Gunn, maintained his hold on several generations of readers with equal firmness. The ease with which he conveys the intricacies of medical knowledge to the ordinary reader will account for much of his popularity, but his fulness of information for the emergencies likely to arise in every family, and with regard to the laws of life on which health depends, for much also. This volume is the last perfected of a series of stereotyped editions. The treatise on 'Domestic and Sanitary Economy' is from the pen of one of the most distinguished of living American scientists."

During the present year this, the *fourth fully stereotyped* edition of "*Home Book of Health*," and the Newest Family Physician, of Dr. Gunn, has been carefully revised, and contributions of more modern methods of

treatment of diseased conditions of the human organism are given, covering about ninety different subjects, amending and enriching the volume with essential additions, largely in medical treatment, and to a smaller extent in other portions—in the Sanitary Instructions, in Minor Surgery, in sundry suggestions for the better preservation of health, and in exigencies and on points of danger, etc., wherein the people and practitioners need to be guarded and helped in the conservation of the great interests involving individual health and life, and the well-being of whole communities.

CHICAGO, October, 1883.

DR. GUNN'S PREFACE.

IN presenting the FAMILY PHYSICIAN, it has been the object of our humble labors to condense into a cheap, convenient form, a useful Family Book, in plain language, as free as possible from medical terms. At the same time, not to confine our efforts to medicine alone, we have endeavored to present a portion of that useful knowledge which leads to eternal life, and soothes the human spirit amid its worldly afflictions. The general lack of knowledge respecting medicine and the laws of life, health, and disease, renders people capable of being made the easy prey of the villainous quack; therefore, a general spread of suitable knowledge among the people upon these subjects, is the only possible and sure means of effectually removing from society this widespread evil.

The honest fears of some that the physician should alone prescribe, is a mistake. There is not that strangeness and marvelousness about medicine which many suppose; the administration is to be guided by good judgment and common sense, necessary qualities, which all physicians, and young practitioners generally, do not always possess. No knowledge is worth any thing unless founded on *truth* and experience; and a long practice in my profession has fully convinced me that more favorable results take place from simple remedies, and good nursing, than from eminent physicians who quarrel with each other for pre-eminence in fame, instead of endeavoring to enlighten and advance the happiness of the human family. How many disgrace their profession by sustaining the dark shadows of ancient superstitions, instead of advocating the improvements of modern times. The chief object of their works is the rehearsal of former errors. Let me, then, in plain language, tell you that the science of medicine is the only one so largely characterized by uncertainty. It appears to me but fair to enlighten the people, as far as I can, on this important subject; for every one is interested in the prolongation of life and health, and should be, in a country like ours, allowed the privilege of thinking for himself, if he does not choose to act. It is natural enough for the Public to look to the medical profession for

advice, and their services at times are very desirable, if they are well informed in their business. But that they should have exclusive control, I cannot admit. I respect the Faculty, and I hope that I justly appreciate their important labors, and their kindness in recommending my former work—"*Gunn's Domestic Medicine*," first published in 1830—but I must honestly say, that private individuals have often contributed information for the preservation of health and life of the most valuable character, solely derived from unstudied, or, at least, from unprofessional experience. And from the consideration that it is, through the blessing of God, my duty to afford to the sick and afflicted such seasonable advice as I can, I have completed this Family Book. I am not attached to monopolies of any kind, and less than any to that which confines to a particular order that information which teaches how to relieve sickness and pain.

Having indulged these prefatory remarks, I would mention, that in preparing this work, I have examined with great care a large number of late medical books, and given nearly every new remedy of any value in the simplest language, adapted expressly to the use of families. This examination, together with my own experience, during a long series of years, in the active duties of my profession, enables me to offer a book to be relied upon, and which I am confident will not disappoint the expectations of my old friends and patrons.

The former large demand for my old book, and the many favorable notices from the press, in all parts of the country cheered me in my past labors, and encouraged me to enter upon this new work with increased zeal and energy.

PUBLISHERS' NOTICE.

"THE NEWEST FAMILY PHYSICIAN" is offered to the public printed from entirely new type, and materially improved in typographical execution upon former editions. It has been carefully amended in minor details throughout, and essentially improved and enlarged. One department is presented in a new and more practical form, and four wholly new sections are embodied, adapting the work more precisely and completely to the frequently expressed wants of the public.

These additions and changes—made in the light of past experience, under the same eye which has supervised all former improvements in the work—are given with confident anticipations, based upon past success, of wide-spread approval. The expense has been very large, but the volume is likewise large; it contains more than double the matter published originally, under the title—"GUNN'S NEW DOMESTIC PHYSICIAN; OR, HOME-BOOK OF HEALTH."

JULY, 1875.

GUNN AND JORDAN'S

FAMILY PHYSICIAN.

INTRODUCTION.

DISEASE is not unfrequently the means of leading to the path of Virtue; it has a salutary operation on our moral constitution, and prepares us for the rewards of obedience. Death is a departure from the present scene; and we have good reason to conclude that with respect to those who have acted virtuously here, it is a transition to a more exalted state of being. No virtuous person, then, has reason to complain; the vicious ought to direct their murmurs and complaints not against the Author of their existence and their enjoyments, but against their own follies and perversity, in often disobeying the dictates of reason and conscience, and so forfeiting that happiness and health which the bountiful Creator has placed within their reach. When the sun of prosperity beams upon us, and our cup of enjoyment is full, we are too much disposed to forget the fountain from whence all our blessings flow. Hence God chastens us in mercy, to wean our affections from the world, to awaken us to some neglected duty, to make us look to himself, become partakers of His holiness, and meet for a happy immortality. "Whom the Lord loveth He chasteneth, and if we endure chastening, God dealeth with us as with sons and daughters." Often have the subjects of God's moral government had cause to say, "It is good for us that we have been afflicted." We can not always avoid trials; but we may always apply them to wise purposes as instruments of spiritual education, and means of preparing us for future glory. Pride and insensibility may affect to disregard afflictions; it is the province of wisdom to improve them.

They are inflicted by our Heavenly Father for a gracious and wise purpose, and that purpose it should be our constant aim to promote. The excellence of the end to be attained may reconcile us to the means employed to bring it about. The weary pilgrim travels cheerfully through a thorny path, when he knows it is short, and will soon conduct him to the object of all his desires and all his hopes; and shall not the Christian bear with steady fortitude and pious resignation the transitory ills of life, seeing that they are the steps by which he is ascending to the mansions in our Father's house? Our light afflictions, be they what they may, which are but for a moment, work for us "a far more exceeding and eternal weight of glory." Let man regard this world merely as a preparatory stage to a future and an eternal state of existence. Let him consider his misfortunes, sufferings, and miseries, as intended to prepare him the better for a world of undying glory and happiness; and let him persevere in a course of virtue and usefulness, in contempt of the malignity of his enemies and the storms of adversity that beat around him, (for all have their trials and disappointments,) and he will infallibly attain to that perfection and happiness hereafter, which should constitute the only true end and aim of all human exertion and pursuit. We should reflect for what purposes we were born, and through the whole of life look at its end. Consider, when sickness and affliction come, in what we will put our trust. Not in medicine, for that often disappoints us; not in the physician, for however able and skillful he may be, he is only the instrument in the hands of an overruling Providence, and often fails; not in the bubble of worldly vanity — it will be broken; not in worldly pleasures — they will be gone; not in great connections — they can not save you in death; not in wealth — you can not carry it with you; not in rank — in the grave there is no distinction; not in the recollection of a life spent in a giddy conformity to the silly fashions of a thoughtless and wicked world, but in that of a life spent soberly, righteously, and godly, in this present world.

Disappointed hopes, failure of all worldly calculations, constitute the history of mankind. We can not violate the will, expressed or understood, of Heaven, and be happy. We can not sinfully indulge a single passion or pleasure and not be disappointed. The spiritual and moral laws which regulate our lives are as constant and invariable as any to be found in matter. How many would have at this time been living had they not enlisted every hope, thought, and energy in aiming at power, position and wealth, and in indulging the pleasures of vice and immorality, the failure of which involved them and destroyed their health! "The spirits of the wise sit in the clouds and mock us." All that we bargain for at the outset of life, Providence frequently

grants us, and that often for an instant before we quit it. Riches, honors, and the desires of the heart are often obtained, and the dream of happiness apparently realized with lands and increasing possessions. Money comes in abundance; the mansion of splendor is built; child after child promises to secure that which the founder toiled for, in the hope of dignity, and a proud aristocracy, and a name. Then come, as if to complete the fabric and to insure the victory, honors, titles, and a retinue of admiring and false friends, who smile in prosperity, but know you not in adversity. All is gained — nothing is wanting. "Soul, take thy ease" — and yet nothing is acquired. The gift melts in the grasp — the joy passes away in the possession, with the foot on the topmost step of the ladder. Ambition is satisfied, but Providence is revenged. All that the man could ask is given; but to show how vain, how foolish are human aspirations, how less than childish our misdirected aims, how many thousands live to see their property squandered, their houses and lands in the hands of strangers, their children, one by one, removed by death, or cast upon the world wanderers and penniless. Is there no lesson here? These facts may be illustrated in every age and in every clime. The daring and profligate ambition of Napoleon is but a more dazzling example of the same success, and the like terrible defeat and disappointment. Where are the kings whom a breath set up and kept in power? Where is the empire which conquered Europe and defied the world? The narrowest grave of the most distant island received the body of the man who found the earth not large enough for his desires. Bonaparte made known to the world how much a man may accomplish, if he will. God in him exhibited how little all that the godless can accomplish is worth, even when all is obtained.

But happiness is the chief object for which man labors, and yet how seldom does he pause in the pursuit to consider wherein it consists, and how he may best obtain it. The drunkard, and the glutton, and the degraded libertine, look for happiness in these sensual indulgences, and while gratifying them, quail beneath the open gaze of virtue, and acknowledge often, when too late, that those pleasures are of short duration, and cloy by repetition. Behold the ambitious man who tramples on the blood of thousands, through every rule of justice, to gain a world! What streams of blood have been shed to gratify his insatiate ambition! How many thousands and millions have fallen beneath the mighty sword of the warrior, and been left lying in dreamless sleep upon the field of battle, merely to gain for him the evanescent wreath of fame, and to entomb him in a splendid sepulchre, though unconscious of its beauty and its grandeur! The poor beggar finds a grave as well as the great man. They are both destined to be

food for loathsome worms; and the plow-boy, as he passes by their graves, will whistle the requiem to the reposing ashes of their greatness. While the living conqueror turns miserable from his conquest, because he finds not that for which he toiled, how many look for happiness in wealth, and when it is obtained, the golden vision of their hopes passes like a sunbeam; gray hairs and the winter of old age steal quickly upon them, and they look with tearful eyes and sorrowing heart, because they feel that death will soon break the chain which binds them to life. This insane and insatiable passion for accumulation, ever ready, when circumstances favor it, to seize upon the mind, is that "love of money which is the root of all evil," that "covetousness which is idolatry." It springs from an undue and idolatrous estimate of the value of property.

Many think that nothing will do for them, or for their children, but wealth; not a good character, not well-trained and well-exerted faculties, not virtue, not the hope of Heaven — nothing but wealth. It is their god, and the god of their families. Their sons are growing up to the same worship of it, and to an equally baneful reliance upon it for the future; they are rushing into expenses which the divided property of their father's house will not enable them to sustain; and they are preparing to be, in turn and from necessity, slaves to the same idol. How truly is it written that "they that will be rich fall into temptation and a snare, and into many foolish and hurtful lusts, which drown men in destruction and perdition!"

There is no need that they should be rich; but they will be rich. All the noblest functions of life may be discharged without wealth; all its highest honors obtained, all its purest pleasures enjoyed; yet this is not enough. Disappoint a man of wealth, and he mourns as if the highest end of life were defeated. Strip him of this—and this gone, all is gone! And I shall point to no unheard-of experience when I say, he had rather die than live. Many who are enjoying the blessings of health are dissatisfied — many from disappointed love, some from ungrateful friends; others from unkind relations, or the rich man's arrogance, become weary of such society, and, broken in spirit, seek among strangers a home and a resting-place, and spend the remnant of life, with melancholy hearts, toiling from day to day for a miserable support.

It requires no sophistical argument to prove that which is the result of every day's observation, that thousands put into their mouths an enemy to steal away their brains. The internal changes, and the deterioration of the functions of the animal economy in the habitual drinker of ardent spirits, is not confined to the brain, but changes take place in the stomach, liver, heart, lungs, and the functions of

each respectively. And yet, deplorable infatuation! the misguided creature often alleges as an excuse for his tippling or daily use of ardent spirits that he suffers in some one of those organs, and gets momentary relief in this way. But what a relief! A pleasurable moment, to be repaid by hours, and days, and weeks of disease!

These remarks will show you that if you desire to arrive at old age, in the enjoyment of health, it can only be done by a rigid course of abstinence. We shall find, by looking over the biographies of the great men of every age, that those who have possessed the clearest and most powerful minds, neither drank spirits, nor indulged in the pleasures of the table. Sir Isaac Newton, John Locke, Dr. Franklin, John Wesley, Sir William Jones, John Fletcher, and President Edwards, furnish striking illustrations of this truth.

The mind of man is like the fluctuating sea. It is never at rest. View the nature of man, and the objects by which he is surrounded; his immortal capacity forever seeking, yet forever refusing to be filled from earthly sources. Amid this tumult of the mind, this constant restlessness, this fever of disappointment, we shall frequently point out to our readers in this work the potent influence which bodily infirmity exerts over the disposition and intellect, and the necessity and importance of the tranquillity of the mind, and a proper regulation of all the passions, for the preservation of health. The faculties with which our Creator has endowed us, both physical and intellectual, are so dependent upon exercise for their proper development, that action and industry must be regarded as among the primary duties of accountable man. Exertion is connected with success and renown. Such is our constitution, that according to our usual train of thinking, where there is no exertion, there can be neither honor nor reward. Progress in moral and intellectual excellence is our duty, our honor, and our interest. We come into the world feeble in body and in mind, but with the seeds of improvement in both; and these seeds grow according to the cultivation they receive from exercise. The body grows in stature and in strength, and the mind gradually expands. But exercise is requisite to the development both of our corporeal and mental capacities. In the course of years, indeed, the body grows — but without exercise it becomes corpulent, feeble, and inactive; and the mind, wholly undisciplined, remains in a weak and infantile state. That exercise which is requisite in order to bodily health and vigor, and to the evolution of our intellectual and moral powers, is not only the chief means of our improvement, but also the main source of our happiness. Without exercise of body and mind, there can be no happiness or health. There is nothing like business, for enabling us to get through our weary existence. The

intellect can not sustain its sunshine flight long; the flagging wings drop to the earth. Pleasure palls, and idleness gathers rags. But business gets over the hours without counting them. We may be very tired at the end, still it has brought the day to a close sooner than any thing else. Never be idle; exercise improves the health, and employs the mind. Our years are but few, and every minute of indolence, by taking a grain from the heap, shortens our span. If we knew but a day remained for us to live, and we had some great work which we could just finish in that period, with what industry would we labor to complete it! We would strain every nerve, and grudge every second, watching the sun's decline with trembling and fear. Yet life is but a day, and we all have more than enough work to perform. If we would finish our task, we should lose not a moment. The river of time rolls without ceasing; and on its bosom we are hastening to the great ocean of eternity! It will not wait for us, when repenting of our idleness. We may desire to labor, but from its cold waters will remorselessly come a voice, saying, "It is TOO LATE." Ay! it will soon be too late — "for the night cometh when no man can work."

Idleness will render you petulant, and disappointment ruffles the smoothest temper. If we would eradicate the thorns that grow in the path of life, we should guard, with unremitting vigilance, the passions — controlled, they are the genial heat that warms us along the way of life; ungoverned, they are consuming fires. But the most important truth can not be too early learned — the great essential to our happiness is, the resolution to perform our duty to God, as well as we are able; and when this resolution is deeply fixed, every action and every pursuit brings satisfaction to the mind. Then, if the prospects in this life are so precarious — if the pleasures of this life are so transient — if from mutability human things are void of substance, and no confidence can be reposed in them, to what resource must we apply to become possessed of some secure dependence, to support and buoy us up in the hour of sorrow and affliction? To whom shall we fly for comfort in the hour of trouble? Nature and reason reveal the healing consolation; it is a pure, invaluable gem, which shines bright est in adversity. It is the gem Religion! that beacon which lights us to another and a better world; it serves as a consolation when mankind desert us, and the cheerless hand of sorrow is placed upon our brow. It is a friendly attribute — a glorious yet modest flower, the seed of which should be engrafted, nourished, and protected in the infant's breast, that in later years it may prove a rich and glorious harvest, serving in declining days as a comfort and support.

REMARKS.

HEAVEN gave every man time for some useful purpose, and a man's life must have been badly spent, if there are no green spots in the wilderness of the past, to which he can look back with consolation and pleasure. How many live in this world as useless as if they had the right to pass through life as a mere cipher, and leave the world without performing a single action of kindness to their fellow-creatures, or leaving a single trace by which their memories may be perpetuated to posterity, either for their usefulness, their virtues, or their charities!

How many deliberate or think what they will do, and reach the close of their earthly pilgrimage, without coming to any determination, either of profit to themselves or to others. Miserable must the reflection be when such a man, in the decline of life, considers how unprofitable he has been to himself, to his fellow-creatures, and above all to his *Creator*. "Thou unfaithful steward"—no sweet thoughts to soothe the troubled spirit amid the busy scenes of life, or the pleasures of the world; forgotten are the important lessons of *Truth*, that life is but the preparatory state of an endless existence, and that we are to render an account for our stewardship here. That wisdom which does not enter the heart, is but of little value, for the real use of knowledge is to make us better, not to make us greater. Whosoever learns much without becoming more pious and humble, makes bad use of his learning; and we should bear in mind, that, where there is no piety, either in man or woman, there is no security for virtue, and no power to resist and overcome those evil passions and propensities which destroy our peace, and our health, and are constantly, more or less, the great sources of disease, both mentally and physically.

You will at once perceive how essential and important to health is tranquillity of mind, and a proper regulation of all the PASSIONS, for they are properly considered the moral thermometer, that regulate the system, and hold the most powerful influence over the general health. And I may as well tell you here, as anywhere else, for it is the truth, that much medicine is taken, and many ineffectual attempts made, to cure diseases which have their origin in a dis-

ordered mind. And I have no doubt that thousands are killed by dosing and drugging every year, instead of assisting nature, by exercise, proper diet, change of climate, and rest of mind. These sanitary changes afford relaxation from the cares of business; the mind requires rest, as well as the body, and without it, it is impossible to enjoy health.

I have often regretted that physicians did not attend more strictly to this matter, and thereby save patients by timely advice, from a broken constitution, and, not unfrequently, a lingering and miserable existence. Unfortunately, however, physicians are paid more for their visits and medicines, than for their advice.

That the mind has a powerful influence on health, is well known to medical men, and in fact to all persons of observation; and this is the reason why physicians encourage their patients. Not unfrequently, mental emotions, such as fear, grief, or any great anxiety of mind, have turned the hair gray, in a single night. Man is more or less the creature of passion, prejudice, habit, and education. The heart, alas! despite of the stern philosophy which justice bids us exercise, invariably warps the understanding; even when most disposed to place reliance on the impartiality of our discriminating faculties, the sympathies and prejudices of our nature still triumph; and in leaning to what we esteem justice and equity, we only follow the leadings of modes of thought and reasoning, that have been instilled into us through early training and education. This shows the importance of proper moral instruction, and the necessity of correct early habits.

We are often, too, misled by the force of imagination. A celebrated French physician of Paris, author of many excellent works on the force of imagination, being desirous to add experimental to his theoretical knowledge, made application to the minister of justice, to be allowed an opportunity of proving what he asserted, by an experiment on a criminal condemned to death. The minister, by order of the emperor, delivered over to him an assassin, who had been born of distinguished parents. The surgeon visited the prison and told the unfortunate man that several distinguished persons had taken an interest in his family, and had obtained permission of the minister that he should suffer death in some less disgraceful way than on the public scaffold, thereby saving the feelings of his family, and that the easiest death would be by blood-letting. The criminal gladly agreed to the proposal. At the time appointed the physicians repaired to the prison, and the criminal being extended on a table, his eyes were securely bound, and he was slightly pricked, near the principal veins of the legs and arms, with the point of a pin. At

the corners of the table were placed four little fountains or basins, filled with warm water, from which poured several streams, falling into tubs placed on the floor to receive the water. The poor criminal, thinking it was his blood that trickled down his arms and legs into the tubs, became weaker and fainter by degrees. The remarks of the medical gentlemen present, in reference to the pretended quality and appearance of the blood, increased the delusion, and he spoke more and more faintly, until his voice was at length scarcely heard. The profound silence in the apartment, and the constant dripping of the water, had so extraordinary an effect on the brain of the patient, that all his vital energies were soon gone, although a very strong man, weighing one hundred and ninety-five pounds, and he was dead in one hour and forty minutes, without having lost a single drop of blood.

I will give you a curious incident, which will show you how fancy will put life into young limbs.

A gentleman having led a company of young children beyond their usual journey, they began to be weary, and cried to him to carry them; which, from their number, he could not do, but he told them he would provide them with horses to ride on. Then cutting little sticks, he gave one to each, and providing a larger one for himself, he bestrode it; whereupon they straddled each their stick and rode home without the least complaint.

The religious fanatic and the martyr to political excitement have exhibited resistance to physical agents to a degree of inflexibility almost incredible.

The Shakers believe that, in their trances and visions, their souls visit the heavenly world.

In this state, the lancet has been applied to them, and their flesh scarified without producing a particle of blood. This will plainly show you the power the mind exercises over the physical system, or in other words, over the body, and its great influence in producing a cure in many diseases.

Some persons suffer much more from pain than others; it is well known that all do not bear surgical operations equally well. This is, doubtless, greatly dependent upon their organization, although it may be modified by habits of endurance, or on the contrary, in particular diseases, depending on the condition of the nervous system at the time, which should be particularly and strictly attended to, for it is remarkably susceptible of impressions. The slightest motion of the muscles, the slightest breath of air, will often induce the most excruciating torment, where the person is morbidly impressed; the operation of medicine is interfered with, and regular physiological action must be importantly modified. For example, we see this in the cases

of many females at the time of child-birth: labor-pains may be proceeding in the most gradual and favorable manner — but if any thing should keep the expected physician from attending, and a stranger is called in, and particularly if the female has a want of confidence, or prejudice against the man, her pains will at once subside, and her delivery be greatly retarded; but should the physician or midwife, in whom she has confidence, attend her, the delivery of the child will be much speedier, and no doubt much easier.

Dr. A. T. Thompson, of London, an eminent man in his profession, related many highly interesting cases of this nature. "I give you a case," said the doctor, "as an illustration of the control of the mind over the operations of medicine, where the whole effects must have been induced through the nervous agency, modifying the functions of the organs concerned. A lady was laboring under an affection of the bowels, attended with severe pain and the most obstinate costiveness. She was bled, the warm bath used, and fomentations frequently resorted to, and purgative medicines freely administered, with injections and anodynes, but without the least effect upon the bowels, and without affording any relief from pain. At length the physician in attendance was informed that she had expressed her conviction that if her usual medical attendant, who was then in the country, and alone understood her constitution, could be called, she would be relieved.

"This physician was accordingly sent for, and on his arrival, although no change either of measures or medicines was resorted to, her bowels were quickly moved, sleep and entire relief of pain followed, and in a few days she was perfectly well."

Medical faith is a matter of very great importance in the cure of diseases, and in my practice I wish I may never have a patient who has not implicit confidence in me as a physician, for when faith is wanting, little success is to be expected. The influence of Hope is also necessary to procure relief, and the alleviation or removal of disease is, in a great measure, dependent upon the condition of the mind.

The agreement between the mind and body is constant. The administration of new medicines, without possessing anything particularly novel or powerful, will frequently induce an amendment of the disease, and this is often the reason why medicine prescribed by physicians of celebrity, or professors, has been known to succeed better in their hands than in those of other persons.

It is greatly the confidence and hope of the patient that works the cure.

Disease is well known to depress the powers of the understanding as well as the vigor of the muscular system, and will also deprave the

judgment as well as the digestion. A sick person, in particular, is extremely credulous about the object of his hopes and fears. Whosoever promises him health, generally obtains his confidence; and this is the reason why so many become the dupes of quacks and patent medicines. And I again repeat it, medical faith is a matter of very great importance in the cure of all diseases, and where the physician has not the confidence of his patient, he had better surrender him into other hands.

"Hippocrates admitted, that that physician performed the most cures, in whom the patient placed the greatest reliance; how important, then, a great name! Dr. James has related a case communicated to him by the late Professor Coleridge, which strikingly illustrates the power of the imagination in relieving diseases. As soon as the powers of nitrous oxyd were discovered, Dr. Beddoes, of the London Hospital, at once concluded that it must necessarily be a specific for paralysis or palsy. A patient was selected for the trial, and the management was intrusted to Sir Humphrey Davy. Previous to the administration of the *gas*, he inserted or placed a small pocket thermometer under the tongue of the patient, as he was accustomed to do on such occasions, to ascertain the degree of animal temperature with a view to future comparison.

"The paralytic man, wholly ignorant of the nature of the process to which he was about to be submitted, but deeply impressed with the representation of Dr. Beddoes as to the certainty of success, no sooner felt the thermometer under his tongue than he concluded that the gas was in full operation, and in a burst of enthusiasm, declared that he already experienced the effect of its benign influence throughout his whole body. The opportunity was too tempting to be lost. Davy cast an intelligent look at Coleridge, and desired the patient to call again on the following day. The man again called at the appointed time, when the same ceremony was performed, and repeated every succeeding day for a fortnight; the patient gradually improving during that period, when he was dismissed as cured, no other application having been used.

"Prof. Woodhouse, in a letter to Dr. Mitchell, of New York, has given a recital, which also tends to show what singular effects can be caused if the imagination be previously and duly prepared for the production of wonders. At the time that the nitrous oxyd excited almost universal attention, several persons were exceedingly anxious to breathe gas, and the professor administered to them ten gallons of atmospheric air, in doses of from four to six quarts. Impressed with the belief that they were inhaling the nitrous oxyd, quickness of the pulse, dizziness, vertigo, difficulty of breathing, great anxiety about

the breast, a sensation similar to that of swinging, faintness, restlessness of the knees, and nausea, or sickness of the stomach, which lasted from six to eight hours, were produced"—symptoms entirely caused by the breathing of nothing but common air under the influence of an excited imagination.

The force of imagination, the power of fear, exercised on the animal economy, are admitted by every medical observer, and indeed by every one of common sense; and the limits to which their operations are to be assigned, no one can designate. This subject is of great importance to the medical man, if he wishes to practice successfully; and how very much is it to be regretted that so little attention is paid to this important subject, the influence of the mind upon the vital functions.

Research in such a field of inquiry, I doubt not, would display many phenomena, which, in ancient times, were attributed to supernatural causes, and latterly to magnetic and other causes, which might be satisfactorily referred to the operations of the nervous system alone, without the supervention of other agencies. The *modus operandi* is not understood, and the opinions entertained by distinguished physiologists are various.

The operations of the moral feelings and emotions in the production of corporeal diseases are far from being understood, and I have no doubt hundreds have died from fear during the prevalence of cholera, who would have been living at this time had they possessed moral courage.

At the commencement of the present century, a quack, by the name of Perkins, asserted that certain diseases could be cured by merely drawing over the parts affected two metallic pieces. The extraordinary effects reported of their operation, were, by some, attempted to be accounted for by a supposed galvanic, electric or magnetic influence exerted over the disease by the peculiar composition of the metals of which the tractors consisted; but it is not always found practicable, either in physic or physiology, to discover the cause or effect of certain conditions.

A distinguished physician, of the General Hospital at Bath, in England, who had no confidence in the virtues of the metallic tractors, except through the means of the imagination, in effecting a cure, resolved upon testing, by experiment, their virtues, and communicated his intentions to his friend, Dr. Falconer.

They selected five patients from the hospital. The diseases under which they labored were various and of a chronic character, such as gout, rheumatism, palsy, debility, pains in various parts of the body. Many of them had been ill for several months, and not benefited by

the various and usual remedies used in these complaints. The false tractors were made of wood, and not of metal, and painted so as to resemble the metallic ones in color and appearance. Upon the afflicted parts being stroked in the lightest manner by the pieces of wood, the patients all declared themselves relieved; three of them were particularly benefited, and one immediately improved so much in his walking that he took great pleasure in exhibiting proofs of the benefit he had received. One said he felt a tingling sensation for two hours after the operation.

At the Bristol Infirmary similar experiments were made, and extraordinary cures performed, so that more patients craved relief than could be attended to. Many that were unable to lift up their legs, or their arms, were, after the application of the supposed metallic tractors, immediately able to carry heavy weights and attend to their various occupations with perfect ease.

These cases are so remarkable, being also publicly done, and that, too, in the presence of the most respectable witnesses of unimpeachable veracity, although a perfect deception, established fully the extraordinary virtues of this empirical or quack remedy.

This thing called "*Faith*" works miracles. A doctor being asked the question, why he could not cure his mother-in-law, as well as his father, wittily replied, that his mother-in-law had not the same confidence in him that his father had, otherwise the cure would have been effected.

The most singular instance of the power of the will over the functions of the body, and taken altogether, perhaps, the most remarkable case on record, being supported by the most unquestionable testimony, is related by Dr. Cheyne, in his *English Malady*, pages 308 and 310. The case is that of Hon. Cornel Townshend, who for many years had suffered from an organic disease of the kidneys, from which he was greatly emaciated. He was attended by Dr. Cheyne, Dr. Baynard, and the distinguished surgeon, Dr. Skine, three of the most eminent men in England. These gentlemen were sent for, in great haste, early one morning, to witness a singular phenomenon, or strange case.

He told them he had for some time observed an odd sensation, by which, if he composed himself, he could die or expire when he pleased, and by an effort come to life again. The medical gentlemen were opposed, in his weak state, to witness the experiment, but he insisted upon it, and the following is Dr. Cheyne's account:

We all three felt his pulse first; it was distinct, though small and thready, and his heart had its usual beating. He composed himself on his back, and lay in a still posture some time; while I held his right hand, Dr. Baynard laid his hand upon his heart, and Dr. Skine

held a clean looking-glass to his mouth. I found his pulse sink gradually until, at last, I could not feel any by the most exact and nice touch. Dr. Baynard could not feel the least emotion in his heart, nor Dr. Skine see the least soil of breath on the looking-glass. We then each of us held to his lips the glass several times, examined his pulse, heart and breath, and could not by the closest scrutiny discover the least symptom of life in him. We reasoned a long time on this strange, odd appearance, as well as we could, and all of us confessed it unaccountable, and beyond our power to explain so strange and inexplicable a case. He still continued in that condition, and we concluded that he had indeed carried the experiment too far, and at last being quite satisfied he was dead, we were about to leave him. He had continued in this situation about half an hour, it being then nine o'clock in the morning, in autumn, when, just as we were leaving, we observed some motion about the body; and upon further examination, found his pulse and the motion of his heart gradually returning; he then began to breathe gently and speak softly. We were all astonished, to the last degree, at this unexpected change in a man we confidently believed to be dead, and after some further conversation with him among ourselves, went away fully satisfied as to all the particulars of this astonishing case, but confounded and puzzled, and unable to form any rational scheme, by which to account for it.

He afterward, several months subsequent to this event, tired and worn out by his mental and bodily sufferings, sent for his attorney, made his will, settled legacies on various servants, received the sacrament, and calmly and composedly expired in one of these extraordinary and powerful influences of the mind over the physical system. His body was examined, and all the viscera, with the exception of the right kidney, which was greatly diseased, were found perfectly healthy and natural.

This power of the will, manifested at pleasure, is perhaps one of the most remarkable phenomena connected with the natural history of the human body. The distinguished Dr. Benton in his works alludes to cases of the same kind, and reports that the celebrated Carden Hagged could separate himself from his senses when he pleased.

Celsus makes reference to a priest who possessed the same extraordinary power.

While I was in London attending the lectures, a lunatic was admitted into the asylum, who imagined that she was laboring under a complaint that required the use of mercury ; but the attending physician, Sir William Ellis, on examination of the case, finding her disease to be entirely in the mind, yet considering that flattering the opinion of the poor lunatic to a certain degree would be favorable to the recovery

of her reason, gave her pills made of bread, and called them mercurial. After a few days using them, she was, to the great astonishment of the doctor, nurses, and students, actually salivated, and the pills were discontinued. On again ordering them, after the salivation had subsided, she was again affected by them in the same manner, and this happened on a recurrence to the use of the pills a third time. By thus indulging her request, she at last recovered her reason, and was discharged, perfectly satisfied, in fine spirits and good health.

The *London Medical Times* relates a curious experiment, tried in Russia, upon some murderers, showing the force of imagination. They were placed, without knowing it, in four beds where four persons had died of cholera. They did not take the disease. They were then told they were to sleep in beds where some persons had died of malignant cholera, but the beds were in fact new, and had not been used at all. Nevertheless, three of them died of the disease within four hours.

The influence of a mother's imagination on the unborn child, although strange, is in many instances very powerful, producing through life peculiar traits of character, as well as disease or bodily deformity.

In a number of the *Scalpel*, a monthly medical work published in New York, by Dr. Dixon, is related the following interesting case of the influence of a mother's imagination upon the unborn child. Mr. A., of a northern part of the State, married, some forty years since, a lady of an adjoining State. Pecuniary circumstances (or in other words, poverty), at the time of the marriage, rendered offspring undesirable, and he often expressed a wish to have no children until their circumstances became better. Within a year, however, it became evident that she was in the family way; on expressing her fears to her husband, she was greatly distressed at the dissatisfaction he appeared to feel on receiving this information. Taking his hat shortly afterward, he left the house, and was absent for near an hour. He was, however, greatly distressed on his return to find his wife in tears. He assured her immediately (for they were devotedly attached), that he was rejoiced to learn the probable realization of her announcement; that he was now satisfied with the prospect of bettering his condition in life, and that his affairs were so much improved that he would be glad to have children, and sought by every means in his power to comfort her. The poor wife dried her tears, but soon expressed her conviction that, in some way, her expected offspring would suffer from her agitation. The husband endeavored to remove her apprehensions by gentle and affectionate ridicule. But her fears continued at intervals during her early months, and gradually increased as gestation or pregnancy advanced. The relief of the parties was great at the birth

of a healthy and well-formed boy. No peculiarity of conduct in the child was observed, till several months had elapsed, and then their fears were renewed by its extreme unwillingness to approach the father This gradually increased, until its dissatisfaction was manifested by loud and continued screaming when brought near him. As age advanced, the most persevering effort was made to overcome this repugnance; the utmost degree of persuasiveness and kindness toward it, gifts and sports, and every ingenuity were tried in vain. The child never could bear the sight of its father, and this utter disgust and dislike increased as it grew up, and so continued. The son, now an active and rising member of the bar, had never been able to speak to his father, though the most painful efforts were made. The feelings of the father may be judged by parents, for he was, and is, an exceedingly affectionate man. We give this case, knowing it to be true, for Dr. Dixon, a medical gentleman with an unusual degree of ability and practical knowledge, has a personal acquaintance with the parties, and of the whole matter that has been productive of so much distress.

Many cases occur showing the peculiarity of patients as to particular medicines, and the effect produced by them on various constitutions, and not unfrequently on some preconceived opinion or prejudice respecting their action, etc. During a long practice I have had to overcome many such cases.

A lady, a patient, informed me that opium administered in any way, caused great restlessness, violent headache, and vomiting. Having of necessity to use it in her case, I prescribed it under the usual medical name, *Tinctura Opii*. The following day I found that her account of its effects were correct, as she had passed a very restless night, with violent headache and vomiting. From her husband, I learned that she was in the habit of reading and commenting upon all the prescriptions of the different physicians who had previously attended her. After a few days I had recourse to the same remedy under a new name (*Tinctura Thebaica*). Now, under this new term, I gave her opium for a length of time without producing the smallest inordinate action, and without the least symptoms of headache or vomiting, but on the contrary, she slept soundly and improved in health. She also spoke in the highest terms of this new remedy, so that under a new name I removed all disagreeable effects.

How often in my practice have I removed similar prejudices as to a particular medicine, by conferring on it a new name? How often do we see medicines produce entirely opposite effects to those which they usually exert over the system, owing to some peculiarities of the patient? I know a lady who could not take powdered rhubarb without its producing a disease of the skin (like nettle-rash), and that in a

few moments after she had swallowed it, and yet she could take it in the form of an infusion without producing this effect. Dr. Dunglison, professor in the University of Maryland, says: "I know a gentleman whom opium purges, yet this drug is usually administered to check inordinate action in the intestinal tube, or, in other words, to check purging." The doctor says that there are very few functions of the body that are entirely free from these peculiarities. Many persons can not be present where ipecacuanha, or tartar emetic, is exposed, without a disposition to vomit; others profess a singular abhorrence at the sight of calomel. The smell of various articles to many persons is so disagreeable as to be almost intolerable. Pope Pius VI. had such an aversion to the smell of musk, that on one occasion of presentation, an individual of the company having been scented with it, His Holiness was obliged to dismiss the party almost instantaneously. The Emperor Napoleon, though a great connoisseur of snuff, could not for a moment bear the smoke of a cigar, and the Emperor Alexander expressly prohibited the use of cigars in his presence. Many persons have an aversion to peppermint, others to cinnamon, some to camphor, and many to opium, in any shape in which it may be prescribed, producing vomiting, headache, great nervous irritability, and producing no anodyne effect whatever. Dr. Thomas states the case of a lady who was always attacked with syncope (or faintness), when she took the smallest dose of calomel.

Peculiarities of this kind could be more fully referred to, but I think I have said enough on this subject to show the importance of attending to these peculiarities, and I am compelled to say (for truth is my object), that many physicians entirely overlook these important temperaments, and I have been thus particular, because, by observation and strict attendance to such cases, I have been taught this valuable lesson, "that many men may be given to profound thought, and possess extensive knowledge, united with sterling honesty, being by nature endowed with the highest order of talent, and yet be wanting in good common sense," or, in other words, "showing the importance of a sound judgment, with close observation of men and things, which constitute the chief corner-stone or paramount foundation in the successful practice of medicine, or, in fact, anything else." Men may theorize finely, but at the bedside practice unsuccessfully: in preference to such persons, give me a good old woman, with her teas and simples, and I will trust the rest to nature. The skillful physician, and one who has had experience in his profession, although he uses medicine, can hardly be said to use it as a curative, but rather to remove obstructions, or to arrest the progress of diseased action. For cure, he looks to the strength of the constitution which remains; to

the powers of nature to rally; to diet, drinks, sleep, exercise, change of air, hope, cheerfulness, etc.; but the reverse is the case with ignorance, or those who have had no experience. Medicine is entirely looked to as means to effect a cure, and in proportion to their ignorance will be their confidence in drugs, and an utter want of faith in the use of simples, good nursing, the influence of the mind, and above all, the restorative power of nature. This clearly explains why it is that the most distinguished physicians feel the deepest conviction of the uncertainty of medicine. At every step they find it necessary to exercise great caution, as, notwithstanding the experience of three hundred years, the medical profession are still doubtful whether the remedies daily used act in unison and harmony with the laws of animal life. This, with many other mysteries not yet clearly explained, has been deplored by the best and wisest men that have adorned the profession of medicine, and as an evidence of this fact, however mortifying it may be to acknowledge it, all the metallic preparations are uncertain, and it depends on the state of the stomach whether they have any action at all, they not unfrequently operating with dangerous violence. I will refer you to the work of Dr. Chapman, professor in the Medical School of Philadelphia, which says: "Taking drugs habitually conduces to destroy the stomach. Every ache or discomfort, real or imaginary, must be relieved by a recurrence to some supposed remedy, till finally the powers of the stomach are worn out, and derangements, functional or structural, take place." It would be salutary were such people constantly to bear in mind the epitaph of the Italian count, who fell a victim to his bad habits:

"I was well—
Wished to be better,
Took physic and died."

Nor can the profession escape the imputation of lending its contribution to this mischief. When called to a case of such obscurity, that no distinct idea can be formed of it, how often do we go on groping in the dark, pouring down drugs empirically, till the stomach gives way, and its derangements are added to the pre-existing affection, by which the case is made of greater complexity and enhanced difficulty of cure! "It is not easy," says the doctor, "always to avoid this course, from the ignorance or prejudice of mankind."

The predominant estimate of the profession, even among the most enlightened people, leads to the delusive supposition that the *Materia Medica* has a remedy for every disease, and that the want of success, under any given circumstances, is owing to the poverty of resource of the practitioner in attendance. Confidence is soon withdrawn should

he intermit his exertions, which perceiving, he too often multiplies his administrations to avoid a dismissal, or the bringing in of some other doctor, who, it is expected, will bring forth a fresh supply of physic. The consultation ended, the new doctor brings forth his new prescriptions of more drugs, etc. With this new armory of deadly weapons he enters the field; an exasperation of the case follows. Not satisfied, however, further trials of new physicians are still made, and these are a repetition of the same proceeding; the catastrophe is complete, for the patient dies. This, which might by some be suspected as a sketch of fancy, says Dr. Chapman, "I have frequently seen and deplored, convinced he was falling a victim to these very practices." The Emperor Adrian deliberately prepared the following as an inscription for his tomb:

"It was the multitude of physicians that killed the emperor."

And now let me say to you, from experience and a desire to inculcate lessons of truth, which you will find useful, avoid as much as you can dosing and drugging, and depend upon what I say to you, that thousands are killed by physic and the daily and constant use of remedies by which the stomach is worn out.

Then let me, for the last time, implore you, in the language of soberness and truth, to depend more on diet, exercise, traveling, change of climate, amusements, or on the presentation of new objects, by temporary absence from the cares of business; in other words, give the mind rest, for many persons are not aware of the serious ills inflicted by confining themselves to counting-houses, stores, and offices, with scarcely any exercise given the body during the day, and no rest of mind. They should change their thoughts to some agreeable and useful amusement calculated to cheer and keep up the healthy action of the system, otherwise they will bring upon themselves very severe forms of ill-health, and that perhaps for life. Hence the reason why so many sickly and pale faces pass along our crowded cities, and so much dyspepsia, saying nothing of many other well-known diseases. Forgetting that *exercise is necessary for health*, all seem to be imbued with the single idea of accumulating wealth, and not *health*. What is money worth to us if we lose our health? How many do we see who toil from day to day, like slaves, for the purpose of securing a large sum of money for their children, and when they have succeeded in doing so, they die without perhaps attaining their fortieth year? How many thousands yearly are sent to their long account by the constant use or abuse of medicines; for it seems to be the order of things, at the present day, that cures are to be effected. not by the recuperative powers of nature, but by the

quantity of drugs or medicines swallowed. Every slight disease they imagine must be followed up by some active poison—*for medicines are poisons*—instead of using such simple remedies as teas, cold bathing, etc., etc.; these properly used may assist nature to perform the cure completely.

Poor human nature! How fearfully does it deceive itself when it flies to drugs to relieve every disease! Look into our large commercial cities, where more work is done with the head than with the hands; where every kind of food for the passions is not only superabundant in quantity, but of the most stimulating quality, and where thousands, who never labor at all, are found who, through the unnatural degree of excitement kept up in the brain and nervous system, and the full play of the passions, bring very great injury to their health. An attentive examination of every class of society will convince us, that in proportion as the intellect is highly cultivated, improved, and strongly excited, the body suffers, till a period at length arrives when the corporeal deterioration begins to act on the mental powers, and the proud man finds that the elasticity even of the immortal mind may be impaired by pressure too long continued, and that, like springs of baser metal, the body requires occasional relaxation and rest, instead of dosing and drugging. I do not know that this disease has ever been described before by any medical writer. I allude to that wear and tear, or state of body and mind, intermediate between that of sickness and health, but nearer the former than the latter, to which I am unable to give a satisfactory name, although it is hourly felt by tens of thousands in the world. It is not curable by physic, although it makes much work for the doctors, and in the end, by dosing and drugging, a profitable business for the grave-digger. It is that wear and tear of the living machine, mental and corporeal, which results from over-strenuous labor, or exertion of the intellectual faculties, or rather corporeal powers—for rest assured that vivid excitement, and tempestuous mental emotion, can not last long without destroying the physical fabric; the animal and the intellectual, or, in other words, the material and spiritual portions of our being are distinct essences, and the latter will survive the former in another and a better existence; but on the earth they are linked in the strictest bonds of reciprocity, and are perpetually influenced one by the other. See that pale cheek, that eye that has lost its luster, that care-worn countenance, that languid step, that flaccid muscle, with great weakness, and the indisposition to exertion, and you will behold the results of a mind worn down by the cares and disappointments of life, and a body exhibiting a faithful picture of its influence upon it. To discover truth in science, the most learned will admit, is very often difficult;

but in no science is it more difficult than in that of medicine. Independent of the common defects of medical evidence, our self-interest, our self-esteem, prejudices, and not unfrequently our ignorance, will hide the truth from our view, and we ascribe all to art, and but little to the operations of nature. The mass of testimony is always on the side of art, and although we believe we are right in our reasoning, we only pursue the old course that has been instilled into our minds through training and education.

Observe the young physician of the present day, who goes forth from the medical college, with his diploma in his pocket, with rather more pride than common sense, having passed through his studies with the rapidity of a locomotive, believing if he does not cure every disease, it is his own fault; but time and experience will show him differently, when his cheeks are wrinkled with the cares and troubles which a professional life always confer, then he will have learned by sad experience, that disease is controlled by nature alone — that her laws must be consulted if he expects to practice successfully. Thousands of persons would have no doubt been now living, had their cases been treated with more simple remedies — for a long experience has fully convinced me that the healing art depends on the preservation of the restorative power, and if this once be lost, the healing office is at an end. I have before told you, in my *Domestic Medicine*, that health is to be restored by assisting nature, instead of retarding her operations. All the physician can do is merely to regulate the *vis medicatrix naturæ*, (the self-preserving energy,) from being excited when languid, restrained when vehement, by changing morbid action or obviating pain or irritation, when they oppose its salutary courses; "*in simplici salus*," or in other words, *there is safety in simples.*

I am not fond of introducing Latin phrases, but when I follow it with the translation, I trust my reader will pardon me. In my writings for the people, I wish to be plain and comprehensive, at the same time to expose all quackery and concealment, for we live in an age when every branch of human knowledge is being reduced to principles of common sense, and when the more important sciences are no longer clothed in mystery, when all the sources of information are open to every one who wishes to read and think for himself. The present age is favorable to every species of improvement; darkness, superstition and ignorance are passing away, and we live when there is a general dawn of light upon the human mind. Every day witnesses new discoveries made in nearly all the sciences. The healing art is likewise improving, and we are abandoning the active remedies which have been used to too great an extent by fanatics, and begin to turn our attention to the great *volume* of *Nature*, which, upon diligent

research, will amply repay us with restoratives which may bring the blessings of health. The time has arrived when the people of this country begin to read and think for themselves, to learn things and not words, to exercise their judgments in matters which concern their welfare and that of their families, instead of paying other people to think for them.

All men and women who possess good common sense, should exercise their judgments in matters that concern their health, and that of their families. They do know, or they should know, their own constitutions best, and study the economy of *health*, not depending on dosing and drugging to the exclusion of exercise, diet, and change of air. Innocent amusements were intended by the Deity for our happiness, and the young should be permitted and taught to indulge in them in a moderate and sensible way. Old and young need periods of recreation. Instead of using medicines daily, which destroy the constitution and leave the whole body worn out, a living thermometer to every change, be your own guide, only be guided by reason and common sense. Thousands die annually, from a wild and infatuated course of swallowing medicines daily, without reflecting that they are taking poison.

Unfortunately for mankind, yet most fortunately for physicians, the people can not ascertain how many valuable lives are yearly destroyed by constant dosing and drugging. I have known many persons who so habituated themselves to the use of medicines that they could not have an operation without taking some purgative.

It is said of the celebrated Dr. Radcliffe, that he was not in the habit of paying his debts without much following and importunity, nor then, if any chance appeared of wearing out the patience of his creditors. A poor man who had been doing some paving for the doctor, after frequent and tedious calling, at last met him getting out of his carriage near his own door, at Bloomsbury Square, London, and dunned him for his bill. "Why, you rascal," said the doctor, "do you intend to be paid for such a piece of work as this? Why, you have spoiled my pavement and then covered it with earth to hide the poor work." "Doctor," said the poor man, "mine is not the only piece of bad work that the earth hides." "Well," said the doctor, "there is much truth in what you have said," and at once paid the bill.

Dr. Shippen, one of the most distinguished medical gentlemen of Philadelphia, and a teacher of medicine in the old medical college of that city for more than forty years, says, "If you find it necessary to have recourse to medicine, there are three kinds which you may make use of with safety, viz.: a tranquil mind, exercise, and a temperate diet. These," said that venerable and most experienced of physicians, "are the best remedies I have ever prescribed."

The celebrated French physician, Dumoulin, on his death-bed when surrounded by three of the most distinguished medical men of Paris, who were regretting the loss which the profession would sustain in his death, said: "My friends, I leave behind me three physicians much greater than myself." Being much pressed to name them (each of the doctors supposing himself to be one of them), he answered, "*water*, exercise, and diet." The practice of every experienced and judicious physician becomes more and more simple the longer he lives. An old physician who administers much medicine is the worst kind of a quack, for his experience ought to have taught him that there are thousands of prescriptions, yet but few remedies. The distinguished Dr. Radcliffe said, that "the whole mystery of physic might be written on half a sheet of paper."

The opinions of some of the greatest medical men who have ever lived, are sufficient to convince us that one of Burns' "Twa Dogs" was right, when he said:

> "But human bodies are sic fools
> For all their colleges and schools."

The late Professor of Materia Medica in Brown University, after half a century of professional labor, says, "What a farrago of drugs has been and is daily used by many physicians! I have really seen," said the professor, "in public, as well as in private practice, such a jumble of things thrown together, and so much medicine administered unnecessarily, that it would have puzzled Apollo himself to know what it was designed for."

A certain practitioner said, that the quantity, or rather the complexity, of the medicines which he gave his patients, was always increased in a ratio with the obscurity of the case. "If," said he, "I fire a great portion of shot, it will be very extraordinary if some do not hit the mark." A patient in the hands of such a man is certainly no better situated than the Chinese mandarin, who, upon being attacked with any disorder, calls in twelve or more doctors; after which he swallows, at one dose, their several prescriptions. Instead of such wild theories, it would be better to tread the path pointed out by a strict observance of nature, simple prescriptions, and simple remedies; for it seems that the human constitution, or corporeal frame, was not thus intricately and wonderfully formed, to require, in repairing, what some physicians term the *broad-axe*, or, in other words, the most active and powerful remedies. It is well known that some of our active remedies, when used to too great an extent, produce disease more difficult to cure than that which they were designed to obviate.

So, always avoid, as much as possible, dosing and drugging. When I was a young man commencing the practice of medicine, I was sure of curing every disease by active remedies and administering a great deal of physic, but in a few years I found, by experience, that I was in a thousand instances mistaken. I lost half my confidence in many remedies, and this must be the conclusion of every rational and experienced practitioner; for as he grows old in his profession, he becomes the more convinced of the uncertainty of medicines. A wealthy city merchant, who resided in London and lately retired from business, called upon Sir Astley Cooper, to consult with him upon the state of his health. The patient was not only fond of the good things of this world, but indulged in high living to a great excess. This was soon perceived by this eminent man, who thus addressed him: "You are a merchant, sir, and possess an entire knowledge of trade, but did you ever know of an instance in which the imports exceeded the exports, that there was not a glut in the market? That is the way with you, sir. Take more exercise and eat less, drink no wines or spirituous liquors of any kind." The gentleman took the hint, and has since declared the doctor's knowledge of the "first principles of commerce, and his mode of giving advice, rendering it so clear to the most humble capacity, has not only enabled him to enjoy good health, but prolonged his life for many years." It was the opinion of Dr. Rush, "that if the same amount of care had been taken to instruct and improve the human species, that has been bestowed upon domestic animals during the last century, there would have been but little need or use for medicines." Man has not been sufficiently considered as an animal. If we paid as much attention to our children as we do to our horses, they would be more healthy, their intellectual powers be in a greater state of preservation, and cultivated at a later period in life. It is highly necessary that man should be attentive to the regulation of his animal appetites. Education commences in the cradle and terminates only in the grave. I am convinced that the mind of man might, like the sun, grow larger at its setting, and shed a more beautiful light at the period of its decline. Remarkable instances are afforded in the celebrated Jeremy Bentham and John Howard, whose lives were devoted to acts of charity and deeds of benevolence, and furnish examples of the efficacy of controlling the animal appetites in prolonging life.

The possession of a sound mind in a sound and symmetrical body, was esteemed by the ancients to be the greatest blessing which man could enjoy. This truth being proclaimed so long ago, renders it very strange that mankind have not profited by it and endeavored,

by every means in their power, to secure a healthy body; for the powers of mind, the evenness of the temper, the kindness of the disposition, all depend upon the state of our physical frames.

Providence puts into our hands the means of preserving health, and this gift involves a solemn responsibility. Health will be counted among those talents for the use of which we are to answer to our Creator; and it is our duty to become acquainted with those laws which regulate and govern it. This is properly termed physical education, and it should be so instilled into our minds, as to render the subject perfectly familiar to us all; for there is but little doubt that we bring most of our diseases upon ourselves by imprudence and the want of a proper knowledge how to ward them off; and if not the effect of our own neglect, they are traceable to ignorance or a want of proper management by our parents or the guardians of our youth, and not unfrequently entailed upon us by them. Then be assured that nature will, sooner or later, call us to an account for a violation of her laws. It is true, for a time we may escape, but the debt and its interest are both accumulating, and must at last be paid. How many charge nature with that which has accumulated through neglect of the economy of health; by attention many evils might be obviated, life prolonged to a good old age, and a large amount of physical suffering diminished! Young persons should be taught the value of health and the means of preserving it, by the subjugation of every immoderate desire, appetite, and passion, thus they may prolong life, and, with proper precaution, live almost uninterruptedly in a perfect state of health.

A knowledge of the circumstances upon which health depends, is one of the most important parts of the moral and intellectual education of youth. We should open the fountains of knowledge to the young on these subjects, so that they may have in store useful information, be well equipped for the voyage of life, prepared to ward off disease, and prepared to strengthen, if necessary, a weakly constitution. Well informed in these matters, they may be useful, in cases of sudden emergency, to the afflicted. The five ordinary secrets of health are, temperance in avoiding all intoxicating liquors, exercise, personal cleanliness, regular hours, and rising from the table with the stomach unoppressed. The use of mustard, pepper, or anything to stimulate the appetite, should generally be avoided.

There may be slight indisposition in spite of the observance of these rules, but you will find all diseases much milder. By observing them you have an assurance almost, that you will escape disease altogether. Most of the ancient philosophers may be named as patterns of health, temperance, and long life. Pythagoras restricted himself to vegetable

diet altogether—his dinner being bread, honey, and water. He lived upward of eighty years. His followers adopted the same diet, and with results equally striking.

It is only at the present day, and from the teaching of Liebig, that food has been regarded from a scientific point of view, both as regards the hale and the sick. It is our knowledge of organic chemistry which is guiding us to a rational comprehension of the utility of food and the requirements of the organism. Before that day the palate ruled, and tastes vary! *De gustibus non disputandum!*

The Burmese bury their fish until it is putrid, in order to give it the flavor they relish, while the Sandwich Islanders like theirs so fresh that they devour fish alive as soon as caught. The Eskimo and the natives of Northern Asia eat huge quantities of fat and drink oil. This diet is in perfect contrast with the food of a desert Arab. On the burning desert little is required to maintain the body-heat, and a handful of dates is sufficient for the body-needs. On the frozen Arctic wastes, fat, the strongest fuel-food, is required in considerable supply to keep the body temperature at a point compatible with life. Cut off, as he is, from farinaceous food, the Eskimo rejoices in the liver of the walrus, with its glycogen, or animal starch; but to give it a higher heating power, he eats it with slices of fat. Instinctively man has adopted the dietary suited to his needs; the Anglo-Saxon who, on the plains of Bengal, persists in eating his roast beef and drinking his ale as he would if in England, will inevitably pay the penalty of his folly in hepatic trouble—a disordered liver. Instinct guided man in his choice of food before the days of Organic Chemistry; this light dispelled darkness, but the palate has not forsaken its throne, nor is it likely to while original sin adheres to the fallen sons of Adam's race. Now let us get from scientists in this year of grace eighteen hundred and eighty-six some theories of theirs which all may be interested in reading, in the following article, or gathering of items concerning food.

FOOD-FACTS FOR USE.

BREAD, or its farinaceous equivalent, is the staff of life. But "thou shalt not live by bread alone" tells us that something in addition is necessary for the food of man. What is that something? Milk? Certainly! Meat? No, emphatically, No! Fat? Yes, especially butter. Some fluid is, of course necessary, as water. Here we have all that is required. Starch for body-fuel; albumen for tissue-repair in the

gluten; earthy salts, too, especially if the bread be made of "whole meal"—being the entire constituents of the grain—and also fat, which serves partly in burning as body-fuel, and partly in building up healthy tissue, the real object to be attained in the use of food.

Let us trace the history of a mouthful of bread and butter. While it is being masticated, the saliva is brought into contact with many of the starch granules (already cracked by the heat of the oven, and not only that, but a step forward has been made in its solution), and the conversion of insoluble starch into soluble sugar is begun. Then it is swallowed, when a new action is set up. The soluble grape sugar of the converted starch passes through the wall of the stomach into the gastric vesicles of the portal vein, leaving the undissolved residuum behind. The acid gastric juice next acts upon the gluten, the albuminous stroma, or frame-work of the mass, and, by dissolving it, liberates the rest of the starch granules which had escaped the contact of the saliva. When the softened mass passes the pyloric ring, and comes in contact with the bile and the secretion of the pancreas, the most active part of the digestive act sets in. The liberated starch granules come into contact with the diastase, or fermenting divisive process of the pancreatic secretion, and are by it converted into soluble grape sugar; the digestion of the albuminous substance is further carried on by the trypsin; the fat is emulsionized—it is only digestion. The sugar, the dissolved albuminoids, the earthy salts, pass into the portal vein, to be dealt with by the liver; while the fat globules pass by the mouths of the lacteals into the lymphatics. Such is the digestion of a typical mass of food. Let all the art and skill of all the cooks who ever lived collect, cook and flavor the various edible substances of the animal and vegetable world, these are the constituents of the food of man.

Nature provides an imperious palate, engrafted upon an imperative sense of hunger, and these secure the nutrition of the body. Succulent vegetables, luscious fruits, sapid flesh, such are the materials upon which the cook exercises his art, and such are the food of the savage. Milk, the natural food of the new-born, either alone or in combination with, chiefly, vegetable matter, is ever acceptable. If the food be simple, there is little or no temptation to excess, but when the cook's art tempts the palate, then! The first temptation came through the call of the palate, "the tree was good for food," and Adam hearkened to the voice of Eve, and ate of the tree, and the history of human troubles began, and now both men and women eat in excess of bodily needs. Man must eat to live, but that is not the true equivalent of to live to eat. The object of food is the nutrition of the body rather than the gratification of the palate. These items we have caught from that admirable recent work, "*A Manual of Dietetics*," by J. Milner Fothergill, M.D., Physician to the city of

London Hospital for Diseases of the Chest, etc., who says in his preface that "the day of Dietetics has arrived," and that "modern advances in our knowledge of the physiology of digestion have been accompanied by a like progress in the preparation of foods. The value of pre-digested carbo-hydrates in acute disease and mal-assimilation among adults as well as children, is now being gradually realized, etc." We go on with excerpts from the volume.

When man ate uncooked grain, as he did at any early period (as the worn molars of granivorous men still tell us when dug up), he ground it slowly under his teeth. But when man came first to crush and then to grind and cook his food, a new departure took place. The toil of grinding was done in a less laborious manner. Disintegration took place in the mill. He could eat faster, a very questionable advantage when it results in filling the stomach with insoluble starch granules, a fertile source of indigestion. "Grinding and cooking lessen the labor of the jaws and salivary glands," but, he adds, "Grain and bread-crusts developed the jaws and teeth. The soft food now in vogue for infants is one factor in the prevailing dental decay." Thus we see the old truth holds, no strength is developed without exercise. Digestion and solution constitute the digestive act. When food is hastily swallowed our mastication is imperfect, the stomach is hampered and embarrassed by quantities of unchanged starch, so that digestion is slow and painful.

When the stomach becomes distinctly acid, the conversion of starch is arrested. When the stomach has done its work and gastric digestion is complete, the acidity seems pretty much exhausted, and the chyme or pultaceous mass finds its way into the duodenum, where it becomes mixed with the bile and the pancreatic secretion. In this alkaline medium the pancreatic diastase comes into play, and the transformation of insoluble starch into soluble dextrine and grape sugar recommences. As the more or less disintegrated or denuded starch granules pass along the small intestine, they become fully dissolved into grape sugar, which passes into the blood of the portal vein.

When the soluble grape sugar (whether derived from starchy or saccharine elements of food, matters not) passes into the portal vein it thereby flows to the liver. Here it is dehydrated, or turned back into glycogen, or animal starch; this the liver stores up from each meal, and gives it off as required; otherwise life would be only one dreary meal. Any disturbance in these glycogenic arrangements leads to the presence of sugar in the urine. These disturbances may extend from the mere presence of sugar in the water after a meal, when the dehydrating power of the liver cannot keep pace with the disastasic activity, up to the dread disease, diabetes. The insoluble store of glycogen is given off, as required, in grape sugar, which probably is burnt up as lactic acid in union with

soda, as lactate of soda. The surplusage of grape sugar forms the fat, or adipose tissue of the body; a further reserve of "fuel-food." This grape sugar is the natural body-fuel, and where it is burnt up, the organism perishes from exhaustion; whether in starvation or acute disease.

Flesh cooked before the rigor mortis sets in is readily masticated, and the Abyssinian, it is said, cuts his steak from the living ox as he wants it. Once the rigor mortis sets in, the flesh is hard and tough; consequently it is customary to keep it until this has passed away before cooking it. The effect of cooking is to loosen the muscular bundles of fibrillæ from each other, so that they are readily torn asunder and crushed by the teeth. Insufficiently cooked meat is hard and resists the action of the teeth; over-cooked meat is stringy. The muscular fibres of properly cooked and masticated meat are readily acted upon by the gastric juice of the stomach. If meat be not chewed, but bolted, the solvent juice can only act upon the outside surface of the mass, while "lumps" offend the stomach and arrest the gastric secretion. Solution is at work under the influence of pepsins aided by an acid. The solvent action of the gastric juice is greatly aided by the movements of the stomach, which rolls its contents about.

We all know the sensations of well-being produced by a good meal, under the action of a competent digestion; sensations which have ever had a potent attraction for the Anglo-Saxon race, with whom *dum vivimus vivamus* has been largely a rule of conduct. But when the digestion of albuminoids is not properly performed, then the case is widely different. It has been shown that peptones in the general circulation act as a depressant poison, and the results of a deranged liver render the individual wretched, miserable and ill at ease. This condition is not uncommon, the "liver stuffs." "So long as the liver possesses the power of converting this *luxus consumption* into soluble urea all is well." Soluble urea passes out of the liquor sanguinis in the renal secretion without difficulty, but not so uric acid. Urea belongs to the animal with four chambers to the heart, while the tri-chambered heart is found with uric acid. So long as the liver can convert the extra material into urea, so long can mankind eat albuminoids in excess of bodily wants; but when this power wanes, and products belonging to a lower stratum of creatures are formed, then it becomes time to pull up and diminish the nitrogenized elements in the dietary. Long continued over-work in dealing with excessive quantities of food is the cause of this impairment in the functional power of the liver. It may not have been the act of the individual, but that of an ancestor. Verily, it is so! * * *

The flesh of animals, "fish, flesh and fowl," is agreeable to the palate and grateful to the stomach, and excellent material on which the cook can exercise skill, but for those who lead an indolent and sedentary life

it is not suited. Most of the maladies which fasten on the body as age approaches are causally linked with the presence of an excess of albuminoid waste in the blood.

FOOD FOR DELICATE STOMACHS.

THE scientific aspect of food must be united in the bonds of holy matrimony with a practical knowledge of the cook's art before one can discourse learnedly of food. Never take for granted that any cooked compound will necessarily be nice, either to the eye or palate. Taste and try! affords the only solution.

Malt Extracts are quite a modern form of food. They have been lauded for their disastasic power, their capacity to digest starch, but this power of a malt extract is far below that of ordinary malt. Ground malt has a great future before it. As the digestive organs are enfeebled by the advance of civilization, predigested starch must come more and more to the front. Ground malt added to baked flour or baked farina in any form, before the hot milk is poured on, makes a most digestible dish. This milk pudding should, when mixed, be placed on a hot plate or where its heat will be maintained, so that the diastase of the malt may act promptly on the farina. Such a pudding is very fluid and requires no cane sugar to sweeten it, a great matter when ordinary sugar swiftly turns acid. Milk is a complete and perfect food, containing fat, albumen, carbo-hydrates with salts, all properly diluted. On this food, life can be sustained for an indefinite period. In sickness, milk is our sheet-anchor. But it is ever to be borne in mind that milk curdles as the first step in its digestion.

The *hard, firm* curd is an irritant to the whole intestinal surface, and where there is acidity present in the digestive tract, this *firm* curdling is liable to occur. Milk is commonly given with lime-water, but this is often too feebly alkaline, and magnesia or prepared chalk must be used, say, what will lie on a nickel for a half pint of milk, or milk may be given with seltzer water, especially where the thirst is considerable.

Skim-milk is excellent in feverish states, and buttermilk is a good beverage where there is much thirst, or in cases of diabetes. Barley-water is pleasant and nutritive; rice-water is nutritive, and may be flavored and made agreeable with currant, raspberry or other juices. It is much in vogue in India.

OF THE PASSIONS.

BY JOHN C. GUNN, M.D., REVISED.

TO subdue the passions of creatures who are all passion, is impossible; to regulate them, appears to be absolutely necessary. And what are these passions which make such havoc, causing striking differences, exciting and depressing the spirits, leading to ecstatic enjoyment, or plunging us in the severest afflictions? What are they more than the development of our sensibilities?

Life is shortened by indulgence in anger, ill-will, anxiety, envy, grief, sorrow, and excessive care. Therefore it is the province of wisdom to exercise a proper control over the passions. If you permit them to govern you instead of governing them, you destroy the vital powers, you destroy digestion and impair the whole nervous system. To attempt to regulate the actions and functions of the body without paying any attention to those of the mind, is like sitting down contented upon escaping one evil, while another of equal importance is still impending. *A wise man governs his passions, but a fool permits his passions to govern him.*

INFLUENCE OF THE MIND UPON THE BODY.

THE passions are modifications of self-love. The preservation of man is the centre toward which all his affections and all his actions converge; he inclines strongly toward pleasure, which maintains or augments the quantity of life that he possesses, and he avoids every thing that can injure him. Pleasure and pain are the generative elements of all the passions, which may be reduced to two, love and hatred.

Pleasure is only momentary; we judge of it by its intensity. Its duration establishes happiness. The greater the pleasure a person experiences, the greater is the apprehension which he has of being deprived of it. This is the origin of fear, which is ordinarily accompanied with *hope*, because these two affections have a common source, the probability of good and evil. Fear gives way to sadness when hope is destroyed; but if we only see in time to come a series of

endless misery, then our sadness is changed to despair, and existence becomes a burden. It is the inherent principle of self-love which makes a man pursue objects that increase happiness. Naturally inconstant, he wishes to vary his agreeable sensations, and his curiosity once satisfied by a new pleasure, he experiences for it a sentiment of admiration. This sentiment belongs alone to great souls. It is not, however, the same with weaker minds; they envy in others the blessings which they do not possess themselves. This passion, envy, is the greatest pest of social order. I will pursue no further the subject of self-love. It will be noticed in its proper place. It is sufficient for me to have explained the manner in which the passions are formed. Some cold moralists have improperly condemned the passions, and have wished to make man a dispassionate being, an automaton, in order to conduct him to perfection. Why we are so differently constituted will be unfolded at that great day, when the wisdom, the power, the mercy, and the goodness of the Almighty shall be made manifest. It is as impossible for man to live without passions as to exist without thought. They are necessary to life The heart of man has a horror for the state of vacuity.

It is only the abuse of the passions which is to be condemned. The functions of the body can exercise themselves in a proper manner only as the epigastrium receives and sends back freely the action; hence the affections of the mind prevent the concentration of the energies and promote their free circulation, and in this respect, they are absolutely necessary to life. I am, here, only to be understood as speaking of the moderate affections, and not of extreme passions, which are very dangerous, and which, carried to excess, may occasion fatal consequences. The difference between one man and another is, that one governs his passions and another is governed by them. A man who permits his passions to govern him, can never be happy; he will be discontented, irritable, and quarrelsome, and throw a tempestuous atmosphere around him, which makes him move in the regions of storms — he employs sure means to shorten and embitter life, whatever may be his external circumstances. He becomes the architect of his temper, and misery must be the result of his labor.

The passion for present and posthumous fame is a deep and abiding principle in the human heart. To be remembered after one is gone — to leave a name that shall "wake the echoes of eternity," and survive the wreck of mortality — is an object dear to the human heart and to its dreams of ambition. Yet, how vain is the hope, how preposterous the desire! How frail is even the strongest bark upon which man relies to float his fame to future generations! What, indeed, is earthly immortality but a mere name, a delusive halo, devised to counteract,

in some measure, that instinctive dread of death so natural to the bosom of man!

The mind is immortal, full of undying thoughts and sublime conceptions. It can lighten through all ages, it can resist the progress and the power of time, and bid defiance to the dominion of decay. It can dart through space, span the universe, and scatter around it, in living and breathing creations, the ample evidences of its divinity. It can throw its richness into the colors of the canvas till rapture shall stand still to gaze upon it. It can embody in marble all the fervor and intensity of passion, and all the sublimity of its emotion. It can infuse into language an eloquence that shall move, melt, and charm the heart of a world. Yet what avails all this, while the materials with which it works are changing, fragile, and perishable? Thought, genius, fancy, may be immortal, while language, marble, and canvas, all must fail. But the man who governs his passions — who is humble, cheerful, contented, and subdues his temper — will endure disease, and be much more easily relieved of bodily ills, and, amid all the privations, difficulties, and disappointments to which we are more or less subject, will find himself able to maintain an unruffled serenity.

The stream descending slowly, with gentle murmur, from the mountain, and rippling through the plain, adorns and enriches the scene; but when it rushes down in a roaring and impetuous torrent, overflowing its banks, it carries devastation in its course; so the passions, appetites, and desires, kept under due restraint, are useful, and fulfill the intentions of a wise and overruling Providence; but, when allowed to rage with unbridled fury, they commit fearful ravages on the character they were fitted to adorn and exalt. If we wish the stream of life to be pure, we must preserve its source unpolluted; and to enjoy health and long life, the passions should be kept under due control. They may be considered the moral thermometer that regulate the system and hold the most powerful influence over the general health. In a temperate exercise of all the physical, intellectual and moral faculties, we enjoy that peace of mind which essentially contributes to a long life, and soothes the spirit to repose amid the trials of this world. In the exercise of benevolence, friendship, love, and a good conscience, with tender, refined, and elevated thoughts of the goodness of God, and our duty to our fellow-creatures, we may be happy. These are never-failing sources of delight, and promotive of health; whereas pride, envy, jealousy, covetousness, anger, and all the passions, habitually indulged to excess, not only embitter our happiness, and that of all around us, but sap the foundations of health, and shorten the period of existence. Guard against them

with unremitting vigilance. Our passions when controlled are the genial warmth that cheers us along the way of life; ungoverned, they are consuming fires. The highest and most profitable learning is the knowledge of ourselves. All men are frail; no self-government is perfect without religion. If thou art better than another, it is not to be ascribed to thyself, but to the goodness of God. Thou canst not tell how long thou wilt be able to continue in the narrow path of virtue. The great Boerhaave, so distinguished for the attainment of the most serene self-command, was so profoundly humble, that when he heard of any criminal condemned to execution, he would exclaim, "Who can tell whether this man is not better than I?" Then, let us rely for aid on our Heavenly Father, who hath said, "If any man lack wisdom, let him ask of me, who giveth liberally and upbraideth not."

Let us rest our self-control on the belief that he is able to do all things; that he will do all things well; that even evil will work for the good of those who love *him;* that nothing can divide us from *his* love, and that even death can not hurt those who have a passport to a heavenly immortality.

INFLUENCE OF LOVE.

LOVE is the divine essence of our being; it flows from God into our souls, and is our life. As the sun of the natural world warms the flower into life and beauty, so does the spirit of man receive the warmth of will, which animates it into life and action, from the great fountain of Divine love.

"If love, then, is one of the essential principles of our being, and through us is to fashion other forms receptive of life, how all-important that we should understand its nature and quality!

"In the brute creation, this influx of love from God is a mere external sensation. Man, too, partakes of animal love; but with him there is also an inner love, which is spiritual and holy, as much above animal sensation, as the soul of man is above brute instinct. And if this inner faculty be not cultivated and developed, man remains an animal, only exercising a rather superior understanding to other animals — dead to all the higher ends of his existence, but unfortunately too much alive to all low passions and propensities; for it is an immutable law of our creation, that we must love — there being no life without love — and when we close our souls to the Divine love, we become receptive of infernal love — for the lost spirits of the infernal regions love; but what do they love? all sin, and wickedness,

and uncleanliness. It behooves us, therefore, to search out and try our loves, whether they be divine or infernal. And as all sin comes from love of *self*, we should seek, above all things, the antidote to that which enslaves us to lust, to pride, to worldliness, and all uncharitableness.

This antidote, God, in his divine providence, has provided for us; first in our love for him, and secondly, in that beautiful love which links the soul of man to woman. These awaken the soul truly to God, and sanctify love with so heavenly an end, that in our inmost spirit we must feel and acknowledge its holiness.

But how is love an antidote to selfishness? I speak not of mere sensual love, but of that which is spiritual and true. When God gave woman to man, it was with a definite and divine purpose, that man in her might love himself, and thus be lifted out of his self-love. Through his senses, which join him to the visible material world, man begins to love. How often do we see this outward love glancing from the spirit-speaking eye of the young, when, in the spring-time and full joy of life, soul seeks soul, as the warbling bird doth its mate, and trills forth a love tone, and often thinks it hears its echo, when it has but struck upon a false sounding-board, that dull and heavy sound which comes to the aching heart full of disappointment. But if the true note of harmony has been trilled, how beautiful it is when man awakens from his dream of passion, and discovers that all the pride of his understanding is reflected in a softened, chastened, and more divine light in the love of the gentle being at his side; he finds his taste, his opinions, the thoughts and feelings of his own soul, appropriated by her; that all unconsciously, while he slept the deep sleep of love, from his own breast, a wife has been created "a helpmeet for him." How peculiarly she is his *own!* She is something wonderful to him; he no longer loves himself, or thinks of himself — in her centers all thought and all feeling. Then how beautifully turns that trusting, loving eye upon him — he is her wisdom, her glory, her happiness — she should learn of God through him — he may love God through her.

But, alas! how rare is the beautiful, truly spiritual union? How often the waning moon of an external love finds paired souls sundered, who are bound, the living to the dead, for this mortal life — vailing behind outward conventionalities their internal disunion, and that burdensome yoke that perhaps binds some almost angel to an ox! The dull beast of earth plods on, all unconscious and uncaring for that dear one who has been a refuge to him from the tempestuous and bereaving storms of life.

Love is the weapon which Omnipotence reserved to conquer rebe-

men when all the rest had failed; reason, he parries; fear, he answers blow to blow; future interest, he meets with present pleasure: but love, that sun against whose melting beams winter can not stand; that soft, subduing slumber which brings down the giant; there is not one human creature in a million, not a thousand men in all earth's domain, whose earthly hearts are hardened against love. "There needs no other proof that happiness is the most wholesome moral atmosphere, and that in which the morality of men is destined ultimately to thrive, that the elevation of soul, the religious aspiration which attends the first assurance, the first sober certainty of *true love.*" There is much of this religious aspiration amid all warmth of virtuous affections. There is latent love of God in the child that rests its cheek against the cheek of its mother, and clasps its arms about her neck. God is thanked, perhaps unconsciously, for the brightness of his earth, on a summer evening, when a brother and sister, who have long been separated, pour out their hearts to each other, and feel their course of thought brightening as they run. When the aged parent hears of the honors his children have won, or looks around on their innocent faces in the glory of his decline, his mind reverts to him who in them prescribed the purpose of his life, and bestowed his grace. But religious as is the mood of every affection, none is so devotional as that of love, especially so called. The soul is the very temple of adoration, of faith, of holy purity, of heroism, of charity. At such a moment, the human creature shoots up into the angel, strengthened, sustained, vivified, by that most mysterious power, union with another spirit, it feels itself on the way to victory over evil — sent out "conquering and to conquer." There is no other such crisis in human life. The philosopher may experience uncontrollable agitation in verifying his balancing system of worlds, feeling, perhaps, as if he actually saw the creative hand in the act of sending the planets forth on their everlasting way. But this philosopher, solitary seraph as he may be regarded amid a myriad of men, knows, at such a moment, no emotions so divine as that of the spirit becoming conscious that it is beloved, be it the poorest creature in his humble cottage, or the daughter of affluence in her luxury, or the poor mechanic who toils for his daily bread, or the man of letters musing by his fireside. The warrior about to strike his decisive blow for the liberties of a nation, however impressed with the solemnities of the hour, is not in a state of such lofty resolution, as those who by joining hearts are laying their joint hands on the wide realm of futurity for their own. The statesman, who, in the moment of success, feels that he has annihilated an entire class of social sins and woes, is not conscious of so holy

and so intimate a thankfulness as they who ascribe their redemption to a new and sovereign affection.

And these are many; they are in the corners of every land. "The statesman is the leader of a nation; the warrior is the grace of an age; the philosopher is the birth of a thousand years; but the lover, where is he not?" Wherever parents look around upon their children there he has been; wherever there are roofs under which men dwell; wherever there is an atmosphere vibrating with human voices, there is the lover, and there is his lofty worship going on, unspeakable, but revealed in the brightness of the eye, the majesty of the presence, and the high temper of the discourse. Men have been ungrateful and perverse; they have done what they could to counteract, to debase this most heavenly influence of their lives, but the laws of their Maker are too strong, the benignity of their Father is too patent and fervent for their opposition to withstand, and true love continues and will continue to send up its homage, amid the meditations of every eventide, the busy hum of noon, and the songs of the morning stars. There is something soothing and delightful in the recollection of a pure-minded woman's affection; it is an oasis in the desert of a worldly man's life, to which his feelings turn for refreshment, when wearied with the unhallowed passions of this world; it is that heaven-born passion that binds us in prosperity, and links us more closely under adversity; it is a tenderness unutterable, which banishes every unhallowed thought, and leads us back to our primeval innocence. They know but little of this passion who deem it the offspring of sighs and protestations. These are but the husbandry which calls forth the common produce of common soils, the needful aliment of that great principle of nature, which alike peoples our cities, and our plains, our rivers, and the air we breathe. In many a heart, where it has never been awakened, lies the subtle essence, which, when touched by a kindred essence, starts at once into giant life. And how manifold are the channels through which that kindred essence works itself a passage to the sleeping mischief! A word, a look, a tone of the voice, one pressure of the hand, though a hundred have preceded it, a simple "good night," or a parting "God bless you!" from lips that have pronounced the words for months, shall, in a predestined moment, be like the spark that falls upon the nitrous heap, followed by instant combustion. And then what a revolution is effected! The eye sees not, the ear hears not, the mind perceives not, as it has been wont; a new being is created; the past is obliterated; nothing seems to remain of what was, and the very identity of the object by whom this delirium of all the faculties has been produced, is destroyed. We strive in vain to recall the mere man or woman we have known, in

the lover or mistress we now adore. Spell-bound in the fascination, inthralled in the idolatry of suddenly awakened passions, we discover wisdom, wit, beauty, eloquence, grace, charms, benignity, and loveliness, where hitherto we at most had dim and visionary glimpses of their possible existence. All is transformed, and in a moment the heart creates its idol; all is sunshine. The graceful form flits before the imagination, and love, with its genial warmth, pours her incense upon the heart. Love, that cordial drop of bliss, that sovereign balm for every woe, as it is of the first enjoyment, so it is frequently the origin of our deepest distress. If it is placed upon an unworthy object, and the discovery is made too late, the heart can never know peace. Every hour increases the torments of reflection; and hope, that soothes the severest ills, is here turned into deep despair. Two souls that are sufficient to each other in sentiments, affections, passions, thoughts, all blending in love's harmony, are earth's most perfect reflection of heaven. Through them the angels come and go continually, on missions of love, to all the lower forms of creation. It is the halo of heavenly visitors that vails the earth in such a golden glory, and makes every little flower smile its blessings upon lovers. Nothing in life is so pure and devoted as woman's love. It is an unquenchable flame, the same constant and immaculate glow of feeling, whose undeniable touchstone is trial; her faithful heart is more devoted than the idolators of Mecca, and more priceless than the gems of Golconda. The world may put forth its anathemas; fortune may shower down its adversities, but in vain; still the unutterable ecstasies of this heaven-born passion are the idol of the human heart. With man, love is never a passion of such intensity and sincerity as with woman. She is a creature of sensibility, existing only in the outpourings and sympathies of her emotions. Every earthly blessing, nay, every heavenly hope, will be sacrificed for her affections. She will leave the sunny home of her childhood, the protecting roof of her kindred, forget the counsels of her aged father, the admonishing voice of that mother on whose bosom her head has been pillowed, forsake all she has clung to in her years of girlish simplicity, do all that woman can do consistently with honor, and throw herself into the arms of the man she idolizes.

Unrequited love with man is to him never a cause of perpetual misery. Other dreams will flow upon his imagination. The attractions of business, the meteors of ambition, or the pursuit of wealth, will win him away from his early infatuation. It is not thus with woman; although the scene may change, and years, long, withering, and lingering years, steal away the rose from the cheek of beauty; the ruins of a broken heart can not be reanimated; the memories of

that idol vision can not be obliterated from the soul. She pines away again until her gentle spirit bids adieu to the treacheries of earth, and flits away into the bosom of her God. There is this difference between a woman's love and a man's: his passion may lead him, in the first instance, to act in opposition to opinion, but its influence is soon suspended, and a sneer or a censure will wound his pride and weaken his love. A woman's heart, on the contrary, reposes more on itself, and a fault found in the object of her attachment is resented as an injury — she is angered, not altered.

There is such a thing as love at first sight, deny it who may; and it is not necessarily a light or transitory feeling because it is sudden. Impressions are often made as indelibly by a glance, as some that grow from imperceptible beginnings, till they become incorporated with our nature. Is not the fixed law of the universe, as illustrated by the magnetic needle, a guarantee for the existence of attraction? And who will say it is not of Divine origin? The passion of love is similar, when of a genuine kind. Reason and appreciation of character may on longer acquaintance deepen the impressions, "as streams their channels deeper wear," but the seal is set by a higher power than human will, and gives the stamp of happiness or misery to a whole life.

I can not but add, how truly deplorable it is that a passion which constitutes the most noble trait in human nature, should now everywhere be trampled upon by avarice. I trust I shall not witness, as our country advances, such instances of legal prostitution as have occurred in some other parts of the world.

I distinguish four seasons of love: first comes love before betrothal, or spring; then comes the summer, more ardent and fierce, which lasts from the betrothal to the altar; the third, the richly-laden, soft and dreamy autumn—the honey-moon, and after it the winter, bright, clear winter, when you take shelter by your fireside, from the cold world without, and find every pleasure there.

And then there is that love "which passeth all understanding," which emanates from God himself, filling us with exceeding joy, that shall never wear away; like a tender flower, planted in the fertile soil of the heart, it grows, expanding its foliage and imparting its fragrance to all around, till transplanted, it is set to bloom in perpetual love and unfading brightness in the paradise of God.

Follow the Star of Bethlehem, the bright and the morning star — the guide to him who in his love gave his dear life for us — it will light you through every labyrinth in the wilderness of life, gild the gloom that will gather around you in a dying hour, and bring you safe over the tempestuous Jordan of death, into the haven of promised and settled rest, to enjoy that love which shall abide forever.

RELIGION.

RELIGION is a most cheerful and happy thing to practice, but a most sad and melancholy thing to neglect. The government of God in the soul is a government which regulates, but does not enslave. If we seriously consider what religion is, we shall find the saying of the wise King Solomon to be unexceptionably true: "Her ways are ways of pleasantness, and all her paths are peace." The idea that religion is a kind of slavery, to which none can submit without sacrificing the natural enjoyments of life, has ever been the greatest hindrance to its advancement among mankind. How much wiser and better should we be if we could carry along with us, from infancy to old age, the full conviction that happiness is the substantial cultivation and exercise of the Christian virtues, and that piety is the firmest basis of morality, securing first God's claims, and by so doing securing our own! For, without the belief and hope offered by Divine revelation, the circumstances of man are extremely forlorn. He finds himself placed here as a stranger in a vast universe, where the powers and operations of nature are very imperfectly known; where both the beginnings and the issues of things are involved in mysterious darkness; where he is unable to discover with any certainty whence he sprung, or for what purpose he was brought into this state of existence; whether he be subjected to the government of a mild or a wrathful ruler; what construction he is to put on many of the dispensations of his providence; and what his fate is to be when he departs hence. What a disconsolate situation to a serious, inquiring mind! The greater the degree of virtue it possesses, the more its sensibility is likely to be oppressed by this burden of laboring thought, even though it were in one's power to banish all uneasy thought and fill up the hours of life with perpetual amusement; life so filled up, would, upon reflection, appear poor and trivial. But these are far from being the terms upon which man was brought into the world. He is conscious that his being is frail and feeble; he sees himself beset with various dangers, and is exposed to many a melancholy apprehension from the evils which he may have to encounter. To reveal to him such discoveries of the Supreme Being as the Christian religion affords, is to reveal to him a father and a friend, and to let in a ray of the most cheering light upon the darkness of his mind. He who was before a destitute wanderer in the inhospitable desert, has now gained a shelter from the bitter and inclement blast. He has found a heavenly father to whom he can pray, and in whom to trust, where to unbosom his sorrows, and from what hand to look for relief. It is certain that when the heart bleeds from some wound of recent

misfortune, nothing is of equal efficacy with religious comfort. Blessed be God for that religion that has power to enlighten the darkest hour of life, and to assuage the severest woes, and to afford the hope of a blessed immortality.

As the silent dews of night fall upon the flowers, and revive their drooping leaves, so does religion, in hours of affliction, revive the spirits and solace the wounded heart — that blessed assurance that gives us strength for all our trials, that takes from misery its bitterness, and strips affliction of its sting. Vain and unprofitable, then, are all earthly advantages. "There is but one thing necessary." The love of God in the heart; it is the fountain from which three streams of virtue will not fail to issue — devotion, self-government, and benevolence. Religion is the soul of love — it is an intuitive light and evidence of what is not to be proved, but which cannot deceive — a light which lights us through a thorny path on earth, and at the close of life lights us to heaven. The beauty of a religious life is one of its greatest recommendations. "What does it profess? Peace to all mankind." It teaches us those ways which will render us beloved and respected, which will contribute to our present comfort as well as our future happiness. Its greatest ornament is charity — it inculcates nothing but love and simplicity of affection; it breathes nothing but the purest delight; it is that pure, invaluable gem which shines brightest in adversity; it is the possession of this sterling jewel that imparts a stimulating impulse to the heart of man; it is the gentle spirit that leads us to another and a better world; it serves as a consolation when mankind desert us, and the cheerless hand of sorrow is placed upon our brow; its magic influence calms the ruffled scenes of life, and makes them glide peacefully away; it soothes the mind in its last hours, removes the sting of death, and gives assurance of the passport of the soul to an endless life of happiness and bliss. The power of religious consolation is sensibly felt upon the approach of death, and blessed be God, for his affording me an opportunity, in a thousand instances, of witnessing the manifestations of His love in this trying hour, when the last words uttered were, "Glory! glory! glory!" and without a sigh, or a struggle, they fell asleep in Jesus. It is in moments like these that religion appears in the most striking light, exhibiting the high value of the disclosures made by the gospel; not only life and immortality revealed, but a mediator with God discovered, mercy proclaimed through Him to the frailties of the penitent and humble, and His presence promised them when they are passing through the valley of the shadow of death, in order to bring them safe into unseen habitations of rest and joy.

Here is ground for their leaving the world with comfort and peace.

But in this severe and trying period, this laboring hour of nature, how shall the unhappy man support himself, who knows not, or believes not, the truths of religion? His conscience tells him that he has not acted his part as he ought to have done; his sins arise before him in sad remembrance. He wishes to exist after death, and yet dreads that existence. God is unknown. He cannot see whether every endeavor to obtain His mercy may not be in vain. All is dark and mysterious before him, and not a ray of light shines upon his benighted mind; in the midst of endless doubts the trembling, reluctant soul is forced away to the presence of its Judge. As the misfortunes of life must, to such a man, have been most oppressive, so its end is bitter; his sun sets in a dark cloud, and the night of death closes over his head full of misery. When man temporarily forgets the concerns of the world, and yields the reins of a fervid imagination into the guidance of an unknown power, the past scenes of his visionary life flit across his mind as a dream. The first mental inquiry that presents itself is, whether the prospects of this world are so precarious; whether the pleasures of this life are so transient; whether the mutability of human events causes us to feel that no confidence can be reposed in them, to what resource shall we apply, to become possessed of some secure dependence to support and buoy us up in the hour of trouble? Nature and reason reveal the healing consolation of that blessed religion, light of the world, sole hope of a ruined race, the renovating principle, which restores life and beauty where all was corruption and deformity.

The mind of man, like the fluctuating sea, is never at rest. There is a perpetual tendency, which cannot be curbed by perpetual disappointment, to send out the desires after some object beyond our present reach. But we are never satisfied by the attainment of any present desires. The law of the natural world, by which objects diminish according to their distance from us, is not observed in the moral. The objects of our wishes are magnified in proportion to the distance at which we view them. As we approach, the charm is broken, the illusion vanishes; they prove to be but bubbles, which, as soon as touched, dissolve into airy vapor. Still we do not rest. At every fresh disappointment we put forth new desires and new efforts for the attainment of some object yet more remote. Even success the most unbounded does not satisfy us; we weep for more worlds to conquer.

Amid this tumult of the mind, this everlasting restlessness of the soul, Religion, benign visitor, heavenly monitor, descends to man. She comes in radiant and alluring form, and addresses him in accents of winning tenderness: Receive me, and I will say to the swelling surges of passion, peace! be still. I will quell the fever of disappoint-

ment by leading you to the fountain of living waters. I will point you to the shadow of a great rock in a weary land. Receive me, oh! thou on whom the Son of God looked with tenderness, and I will direct you to an object of pursuit worthy your heavenly origin, worthy of your nature—but little lower than that of angels—worthy the inward springs of which you are proudly yet painfully conscious. You love pursuit; the object to which I will direct you is infinite, therefore your pursuit will be endless. You delight in progress; here your progress will be commensurate with eternity. Your desires are boundless; you shall be *satisfied* when you awake in the likeness of God. Verily, you shall be frequently filled in this house of your pilgrimage with pre-libations of pure blessedness. Receive me, and you shall never fear what your nature so revolts at: a cessation of hope, expectation, and effort; for your capacity shall be forever increasing, and forever filling with all the fullness of God; throughout the immortality of her existence, your soul shall be continually expanding her views, strengthening her energies, and drinking deeper and deeper of the river of pleasure, which flows at the right hand of the Most High.

Such are the boundless offers of Religion; all that man can desire, all that his nature can receive, more than his utmost powers of apprehension can reach.

This is the most important subject that can interest the attention of man; infinitely more so than the great questions of human policy, which awaken the energies of the statesman, and arouse the wisdom of a nation; for the effects of religion are felt in this world amid all the vicissitudes of fortune, and they extend, beside, into the grave, into the very depths of eternity; that which interests the immortal spirit, which will decide its destiny during eternity, is so far above the petty considerations which agitate the world, that no comparison can be drawn between them.

Christianity enters the hut of the poor man and sits down with him and his children; it makes them contented in the midst of privations, and leaves behind an everlasting blessing. It walks through cities, and amid all their pomp and splendor, their towering pride and their unutterable misery, is a purifying, ennobling, and redeeming angel. It is alike the beautiful companion of childhood, and the comforting assurance of age. It adds dignity to the noble, gives wisdom to the wise, and new grace to the lovely.

The patriot, the minister, the poet, and the eloquent man, all derive their sublime power from its influence. It can not be that earth is man's abiding place. It can not be that our lives are cast up by the ocean of eternity, to float a moment upon its waves and sink into

nothingness. Else why is it that the high and glorious aspirations which leap like angels from the temples of our hearts, are forever wandering about dissatisfied? Why is it that the rainbow and cloud come over us with a beauty not of earth, and then pass off and leave us to muse upon their faded loveliness? Why is it the stars that hold their festival around the midnight throne are set above the grasp of our limited faculties, forever mocking us with their unapproachable glory? And finally, why is it that brighter forms of human beauty are presented to our view and taken away from us, leaving the thousand streams of our affection to flow back in Alpine torrents upon our hearts? We are born for a higher destiny than that of earth! There is a realm where the rainbow never fades, where the stars will spread out before us like islands that slumber on the ocean; and where the beautiful beings, which here pass before us like shadows, will stay in our presence forever. "In *Heaven* there is rest!" It is a truth deeply impressed on the mind of every man, and familiar even to the most thoughtless, that in this life there is to be found but little rest; there is always something to disturb, excite, perplex, disappoint, weary us. The rosy-cheeked infant, the curly-headed boy, the blooming beauty, the man of business, and they of threescore and ten, all appear restless and dissatisfied. Some are unhappy for the want or the loss of friends or relations, of health or pleasure, of riches or employment; thousands of others suffer from a guilty conscience, the result of crime, and from the fears of a future judgment. But though the Christian may feel the effects of sin and suffer from sickness and bereavement, yet the assurance of rest in Heaven cheers and comforts him amid all the sorrows and afflictions of time.

"In Heaven there is rest." There will be rest from sin, from sorrow, and from sickness; rest from troubles, and trials, and temptations; there will be no false or treacherous friends, no deceitful associates, no unkind relations, no bitter enemies. There the *mind* shall be no longer oppressed by cares and anxieties, nor overburdened with difficulties. There will be no sleepless nights, no wearisome days, no secret sighs, no bitter groans, no scalding tears, no unrequited love, no sundering of tender ties, no parting with those we love, no fear of disease, no suffering from pain, no dread of death, no dark and gloomy grave; but all will be sweet and undisturbed repose — all will be peace, happiness, and love. Like the leaves of the forest, we come forth in beauty, pass on with the summer, and then sink to the earth. A few days only and the rose fades from the cheek, the limbs are palsied, and our forms mingle with the dust.

"I envy no quality of the mind or intellect in others, be it genius, power, wit, or fancy; but if I could choose what would be most

delightful, and I believe most useful to me, I should prefer a firm religious belief to every other blessing; for it makes life a discipline of goodness, creates new hopes, when all earthly ones vanish, and throws over the ending of earthly existence the most gorgeous of all lights, awakens life even in death; from corruption and decay calls up beauty and divinity, makes an instrument of torture and shame the ladder of ascent to paradise; and far above all combinations of earthly hopes, calls up the most delightful visions of palms and amaranths, the gardens of the blest, the security of everlasting joys, where the sensualist and the skeptic view only gloom, decay, annihilation, and despair."

Religion! It is not an abstraction. It is not ideal; living only in the brain, and leaving the heart untouched. It does not consist in peculiar frames of mind, in the excitements of animal feeling, or the overflow of these sensibilities, in the kindling of the fancy, or the heating of the imagination. It lives, not merely in visible manifestations of devotion, in the bowing of the knee, the lifting of the hands, in long prayers, in long drawn sighs, or in long cadaverous faces. All these may be without religion, and religion may exist without *them*. Religion shows itself in benevolent action, flowing forth from holy motives. It is that charity which "hopeth all things, believeth all things," yet contents not itself with a "be ye warmed, be ye clothed," but performs the good which it desires. It is that love which embraces all human kind, loving its neighbor as itself. It is that benevolence, which, like a river of good, gushing from a pure fountain, flows freely forth to all, spreading beauty and blessedness around, causing the desolate places of the earth to rejoice, and making the wilderness to bud and blossom as the rose. It knows not the lust of power. It seeks not its own preferment. Its kingdom is not of this world. It is too high to envy the proudest, too meek to despise the humblest. It hath no fellowship with bigotry. It despiseth not its brother because he differeth in opinion. Its creed is, "Do justice, love mercy, and walk humbly before God." Its sect is, "The pure in heart." Its temple of worship is the universe. It is a transcript of Him who spent his life in doing good. It is the spirit of God living in the human heart.

He is the Christian for us, who is always ready to take out his purse and assist the needy; who visits the widow and the fatherless, and keeps "himself unspotted from the world;" who is never at a loss to speak in their affliction, when pleasant words are more valuable than gold. God honors such a soul — angels hover about his path, and devils tremble before him. Such a man is worth to humanity and

religion fourscore of those long-faced, whining hypocrites, who tel what they would do, but are never ready to obey the dictates of common humanity. Give us an army of the truly kind-hearted and benevolent Christians, and we will pledge ourselves to march through the world, conquering and subduing, and bring about that day when wars and bickerings shall cease, and earth resemble heaven. "Charity covereth a multitude of sins." But there are more ways than one of showing kindness to the unfortunate. No doubt the giving of money and other helps are often of very great moment; but there is another kind of charity which is cheaper, and of which we should not be forgetful, lest we should exclaim, "Thank God, I am not as other men." Do not turn the man off, who, in the hour of temptation, yielded to a first fault; bear with him yet a little longer; give him another trial; while you condemn his mis-step, encourage him to good deeds for the future. If you cast him off forever, he may reel blindly and continue to fall until ruin shall have fixed her seal permanently upon him. Be charitable — make due allowance for the weakness of poor humanity. A gentle word, a kind look, an encouraging smile, may save a human being from the abyss of despair. How sweet is the remembrance of a kind act; as we rest on our pillows, or rise in the morning, it gives us delight; we have performed a good deed to a poor man; we have made the widow's heart to rejoice; we have dried the orphan's tears — sweet, oh! how sweet the thought! There is a luxury in remembering the kind act. A storm careers above our heads: all is black as midnight — but the sunshine is in our bosom, the warmth is felt there. The kind act rejoiceth the heart, and giveth delight inexpressible. Who will not be kind? Who will not do good? Who will not visit those who are afflicted in body and mind?

Blessed be God for that Religion which supports us amid the distresses of life, and sustains us in the hour of death. How dark this world would be, if, when deceived and wounded here, we could not fly to our Heavenly Father, who is always ready to dry the mourner's tears, and still the troubled heart! Here it incontestably triumphs, and its happy effects, in this respect, furnish a strong inducement to every benevolent mind, to aid in having its influence diffused throughout the world. On such hopes the mind expatiates with joy, and when bereaved of its earthly friends, solaces itself with thoughts of a friend who will never forsake it.

Refined reasonings concerning the nature of the human condition, and the improvements which philosophy teaches us to make of every event, may entertain the mind when it is at ease; may, perhaps, contribute to soothe it when slightly touched with sorrow; but when

it is torn with any sore distress, they are cold and feeble, compared with a direct promise from the word of God.

"This is an anchor to the soul, both sure and steadfast." This has given consolation and refuge to many a virtuous heart, at a time when the most cogent reasonings would have proved utterly unavailing.

Then consult your own conscience: what does she say is the great end of life? Listen to her voice in the chambers of your own heart She tells you that there is only one stream that is pure, and that stream flows from the throne of God; but one aim is noble and worthy of an immortal spirit, and that is to become the friend of God, so that the soul may wing her way over the grave without fear, without dismay, without condemnation. There is only one path passing over the earth which is safe, which is right, which is honorable. It is that which Jesus Christ has marked out in His word, and which leads to glory. Let conscience speak when you are tempted to waste a day or an hour, or to commit any known sin, to neglect any known duty, and she will urge you, by all the high and holy motives of eternity, to live for God, to give your power to him, to seek his honor in all that you do.

We pity the man who has no religion in his heart; no high and irresistible yearning after a better and a holier existence; who is contented with the sensuality and grossness of earth; whose spirit never revolts at the darkness of its prison-house, nor exults at the thoughts of its final emancipation. We pity him, for he affords no evidence of his high origin, no manifestation of that intellectual prerogative, which renders him the delegated lord of the visible creation. He can rank no higher than the animal; the spiritual nature could never stoop so low. To seek for beastly excitements — to minister with a bountiful hand to depraved and strong appetites — are attributes of the animal alone. To limit our hopes and aspirations to this world, is like remaining forever in the place of our birth without ever lifting the vail of the visible horizon which bent over our infancy.

There is religion in every thing around us — a calm and holy religion in the unbreathing things of nature — which man would do well to imitate. It is a meek and blessed influence, stealing in, as it were, unawares upon the heart. It comes quietly and without excitement. It has no terror, no gloom in its approaches. It does not rouse the passions; it is untrammeled by creeds, and unshadowed by the superstitions of man. It is fresh from the hands of its author; and glowing from the immediate presence of the Great Spirit, which pervades and quickens it. It is written on the arched sky. It looks out from every star. It is on the sailing cloud, and in the invisible wind. It is

among the hills and valleys of earth — where the shrubless mountain tops pierce the thin atmosphere of eternal winter, or where the mighty forest fluctuates before the strong wind, with its dark waves of green foliage. It is spread out like a legible language upon the broad face of the unsleeping ocean. It is the poetry of nature. It is this which uplifts the spirit within us, until it is tall enough to overlook the shadows of our place of probation; which breaks, link after link, the chain which binds us to materiality; and which opens to our imagination a world of spiritual beauty and holiness. Witness the influence of pure religion upon those who walk in the ways of righteousness, looking to the end of time for the fulfillment of God's own purposes. True faith fills society with happy hearts and smiling faces; fanaticism crowds the asylums with lunatics, and the streets with deranged mendicants. Eternity contemplated afar off, through the medium of faith and hope, reveals the abode of the just made perfect; when brought too near by an excited imagination, it may palsy the mind with fear and dethrone reason by its appalling terror. Blessed are they who so improve life's little space, that the autumn of existence and even the hand of death may approach without exciting an emotion of regret or a shade of fear.

The following is the closing paragraph of the will of Patrick Henry: "I have now disposed of all my property to my family; there is one thing more I wish I could give them, and that is the Christian religion. If they had this, and I had not given them one shilling, they would be rich; and if they had it not, and I had given them all the world, they would be poor." This opinion of that celebrated man confirms the importance of religion in a dying hour. He was only answering the question propounded by the author of our holy religion, "What shall it profit a man if he gain the whole world and lose his own soul?"

Christ re-established the unity of human nature. He taught us the principles of eternal justice, and the grand secret of all harmony and happiness on earth as in heaven — love. Till we arrive at that point of his system, we are unacquainted with Christianity, and ignorant of our natures and our destinies. The dogmas and the mysteries that many disciples have wrapped around this glorious sun of the Christian system — this all-embracing sentiment of universal love — have tended to obscure its light from us, and to screen from us its vital warmth. The gospel does not consist in doctrines and ceremonies alone, but in love. But to love, we must know who are worthy of our love; and here again the revelation of Christ teaches us that "Thou shalt love thy neighbor as thyself.' And then comes the question, "Who is my neighbor?" and the

answer expressed in an immortal story was, "Every one who needs thy help."

Bishop Butler, when on his death-bed, observed, "that though he had endeavored to avoid sin and please God, yet, from the consciousness which he felt of perpetual infirmities, he was still afraid to die." "My dear friend," said a poor but pious man, who was in the room with him, "you have forgotten that *Jesus Christ* is a Saviour.' "True," was the answer, "but how shall I know that he is a *Saviour* for me?" "My dear Bishop, it is written, 'He that cometh unto me I will in nowise cast out.'" "True," replied the Bishop, with joy depicted in his countenance, "I am surprised that, though I have read the Scriptures a thousand times over, I never felt its virtues till this moment, and, blessed be God, I now die happy."

AFFECTION.

THE MOTHER'S AFFECTION. Alas! how little do we appreciate a mother's tenderness while living! How heedless are we in youth of all her anxieties and kindness! But when she is dead and gone — when the cares and coldness of the world come withering to our hearts — when we know how hard it is to find true sympathy, how few love us for ourselves, how few will befriend us in our misfortunes, then it is that we think of the mother that we have lost. It is true, I had always loved my mother, even in my most heedless days of infancy, when I was led by a mother's hand and rocked to sleep in a mother's arms, and was without care or sorrow. "Oh! my mother!" exclaimed I, burying my face again in the grass of the grave, "Oh! that I were once more by your side, sleeping, never to wake again on the cares and troubles of this world."

Scarcely a day passes that we do not hear of the loveliness of woman, the affection of a sister, or the devotedness of a wife, and it is the remembrance of such things that cheers and comforts the dreariest hours of life, yet a mother's love far exceeds them in strength, in disinterestedness, and in purity. The child of her bosom may have forsaken and left her, he may have disregarded all her instructions and warnings, he may have become an outcast from society, and none may care for or notice him, yet his mother changes not, nor is her love weakened, and for him her prayers still ascend.

Sickness may weary other friends, misfortunes drive away familiar

acquaintances, and poverty leave none to lean upon, yet they affect not a mother's love, but only call into exercise, in a still greater degree, her tenderness and affection.

The mother has duties to perform which are weighty and responsible; the lisping infant must be taught how to live, the thoughtless child must be instructed in wisdom's ways, the tempted youth must be advised and warned, the dangers and difficulties of life must be pointed out, and lessons of virtue must be impressed on the mind. Her words, acts, faults, frailties, and temper, are all noticed by those who surround her, and impressions made in the nursery exert a more powerful influence in forming the character of youth, than do any later instructions.

If passions are unrestrained, if truth is not adhered to, if consistency is not seen, if there be a want of affection, or a murmuring at the dispensations of Providence, the youthful mind will receive the impression, and subsequent life will develop it. But if all is purity, sincerity, truth, contentment, and love, then will the result be a blessing, and many will rejoice in the example and influenee of the pious mother.

There is something in sickness that breaks down the pride of manhood, that softens the heart, and brings it back to the feelings of infancy. Who that has languished, even in advanced life, in sickness and despondency, that has pined on a weary bed, in the neglect and loneliness of a foreign land, but has thought of the mother that looked on his childhood, that smoothed his pillow, and administered to his helplessness? Oh! there is an enduring tenderness in the love of a mother to a son that transcends all other affections of the heart. It is neither to be chilled by selfishness, nor daunted by danger, nor weakened by worthlessness, nor stifled by ingratitude. She will sacrifice every comfort to his convenience; she will surrender every pleasure to his enjoyment; she will glory in his fame and exult in his prosperity. If adversity overtake him, he will be dearer to her by misfortune; if disgrace settle upon his name, she will still love and cherish him; and if all the world beside cast him off, she will be all the world to him. Round the idea of one's mother the mind of a man clings with fond affection. It is the first deep thought stamped upon our infant hearts, when yet soft and capable of receiving the most profound impressions, and all the after feelings of the world are more or less light in comparison. Even in our old age we look back to that object of our filial love, and remember, with deep regret, how often we have violated her commands and neglected her affectionate counsels; but when death has stilled her monitory voice, and nothing but calm memory remains to recapitulate her virtues and affections, be sure that every unkind

look, every ungracious word, every improper action, will come rushing back upon memory, and, knocking dolefully at the heart, will tell us of our ingratitude.

FEAR.

IT is well known that the depressing emotions of fear, despair, etc., produce a liability to disease under circumstances in themselves harmless. For example, persons who entertain great apprehension of disease are more apt to take it. During the cholera hundreds were seized by this complaint who might otherwise have escaped, as many died of fear, and many died in my presence entirely under the influence of the imagination. Sir George Bolingwell, in his valuable medical work, states that about four per cent. is the usual proportion of sick, who die, though really healthy, from the effects of fear, and that such are the beneficial effects of success and cheerfulness, that in the French army, after the battle of Austerlitz, there were only one hundred invalids in a division of eight thousand, or only one to eighty. Impressions are often made on the minds of children of so appalling a nature that they never recover from the shock. Though of a fearless disposition as regards even the most awful of the ordinary causes of terror, they will exhibit through life a very noticeable cowardice whenever brought into contact with the object of their childish dread. I have known men who would be the first to plant a standard on a hostile fort, or board a vessel, fighting hand to hand with the enemy, and yet would turn pale with affright at the idea of passing a churchyard alone in a dark night, or even at entering a dark room. Marshal Saxe, one of the bravest men who ever commanded an army on the battle-field, would never retire to rest until he had carefully examined the closets in his chamber, and looked under the bed. There is nothing more dangerous and often more fatal, in its effects, than the habit of terrifying children in order to punish them for misconduct.

A small girl, only seven years of age, for some childish act of disobedience was thrust into a dark cellar at some distance from the house, and suffered to remain there through the night. The dreadful cries and screams which the child uttered produced no effect on the cruel and imprudent parents, and when the door was opened in the morning the unfortunate child was an idiot. All medical assistance proved unsuccessful in her case, and she is now a living spectacle, in New York, of the cruelty and ignorance of this unfeeling and miserable family.

There is nothing more abominable than the system adopted by some parents and instructors of small children, of frightening them by way of punishment. In this way great evils are often produced. It is, indeed, assuredly the case that sudden shocks of fear, when administered to children for the sake of a joke, are not unfrequently attended with most serious consequences, as in the case of a child, in Virginia, who was frightened to death. The circumstances which led to this melancholy catastrophe, are not of unusual occurrence. The child was playing with its companions and was told by them, in sport, that a rag man was about to carry him off in his bag. Alarmed with fear, the child ran into the house, when the object of his terror unfortunately coming into the house also, he uttered a shriek and instantly expired. This is not the first nor only instance of the fatal consequences of fright upon children, and even upon adults peculiarly susceptible of fear. An English paper contains the following paragraph: "A girl named Margaret Pete, in order to amuse some companions, dressed herself in a white garment and put on a hideous black mask, in which disguise issuing suddenly from her residence in Palmer's Folly, Ratcliffe Highway, London, she caused so much terror to a child that it died on the following (Friday) morning. The girl was taken into custody and detained till after the coroner's inquest, when she was reprimanded and discharged." Indeed, cases are known in which young persons have had their minds entirely overthrown and been doomed to lives of idiocy by the unprincipled follies of their acquaintances, who have devised and executed some cruel plan of making sport of their fears. Such conduct has no apology. Those who are guilty of it should be held accountable, as the man who levels a deadly weapon at the life of a fellow-creature. And yet this attempt to excite the fears of a child is not unfrequently resorted to by parents, as a salutary punishment. Bug-bears are created to frighten the young innocent into obedience. This is unphilosophical, and in the highest degree barbarous in its nature, often entailing wretchedness in the shape of unnecessary fears on the being whose courage and determination should be fortified and strengthened, instead of being sapped and destroyed by the unnatural and unthinking parent. It sometimes happens that persons, who, for the sake of a good practical joke, in attempting to frighten others, get sadly frightened themselves, or in some other way receive a punishment which they richly deserve. A case is related in the *Medical Journal*, of a young man in the country, who, on learning that some frolicsome girls intended going into a neighboring cornfield one evening to get some ears of corn to roast, determined to frighten them. He accordingly wrapped around his figure a white sheet to represent a

ghost, and parting from his associates, proceeded toward the field in high glee. What he had beheld or met with to excite his fears was never known, but he was soon heard to utter a loud scream, and was soon after seen, still wrapped in the white sheet, running with great rapidity through the fields. At last he reached the house, absolutely frightened out of his senses. He was attacked with epileptic fits, which afterward succeeded each other rapidly. When these fits would return upon him, he seemed much terrified at some imaginary object, and would beg and entreat to have it taken away.

ANGER.

ANGER is a violent emotion of the mind, arising from an injury either real or imaginary, which openly vents itself against the offending party. These gusts of temper are often productive of the most dreadful consequences, and those who give way to this spirit, rapidly destroy their constitution, by impairing the nervous system, weakening the energies of the brain, and often producing apoplexy, or sudden death. So nicely and wonderfully are we made, that all the internal feelings have a strong influence upon the body. The truth of this observation is evident from the effects produced upon those who give way to this brutal rage, degenerating from every noble sentiment to an indulgence in that which so often produces the most demoralizing effects. The passionate man when under its influence becomes incapable of distinguishing right from wrong. As an idiot or a madman, he is carried away by the impulse of the moment, a caprice of the imagination; as violent as a gust of wind, he rashly determines his conduct, and hurries to the perpetration of actions, which, in his calmer moments, strike him with remorse. Behold that countenance under the influence of passion; it wears the strongest and most visible marks of its uncontrollable power; all the nerves are put into the most violent agitation, the frame is continually shattered by its repeated attacks, and not unfrequently it destroys the vital powers. Anger, as it proceeds originally from the mind, ruffles that as well as the body; the calm and quiet affections, which diffuse peace and joy around, fly at its approach, and are succeeded by a black train of evil passions which carry their own punishment, by inflicting the most bitter torment. Nor do the ill effects subside when anger ceases; the mind, like the raging sea, still continues in a state of agitation, though the winds have abated.

It has been argued that anger is the consequence of a peculiar frame

of the body, but this is a simple argument, as it is in the power of every one to control his passions if he is but watchful. It was a memorable saying of Peter the Great, "I have civilized my country but I can not civilize myself." He was at times vehement and impetuous, and committed under the impulse of his fury the most unwarrantable excesses, yet we learn that even he was known to tame his anger, and to rise superior to the violence of his passions. Being one evening in a select company where something was said that gave him great offence, his rage suddenly kindled and rose to the utmost pitch; though he could not command his first emotions, he had resolution enough to leave the company. He walked bareheaded for some time under the most violent agitation, in an intense frosty air, stamping on the ground, and beating his head with all the marks of the greatest fury and passion, and did not return to the company until he was quite composed. Let not any one say, he can not govern his passions, nor hinder them from breaking out and carrying him into action; for what he can do before a prince or a great man he can do alone or in the presence of God if he will.

"Be not hasty in thy spirit to anger, for anger resteth in the bosom of fools." There are some persons professing to be followers of the meek and lowly Jesus, who consider themselves licensed to fall into a paroxysm of anger, on any private occasion, and to abuse their neighbors, scold, cuff, and kick their servants and children, until the surplus amount of steam has been permitted to escape. Is this the spirit of Christ? Nay. Then verily they are none of his. Such a course of conduct grieves the spirit of God, and if continued in, will destroy peace of mind, weaken the intellect, and make the body, which should be a temple for the indwelling of the Holy Spirit, a foul cage, fit only for the habitation of every unclean bird. Did not He who said, "Thou shalt not kill," say, "Be not given to anger?" Why, then, are we privileged to do the one and not the other? Be not deceived, brethren, God is not mocked; "he that soweth to the flesh, shall of the flesh reap corruption;" "a stone is heavy, and the sand is weighty, but a fool's wrath is heavier than them both;" "wrath is cruel, and anger is outrageous;" therefore, let us govern our tempers, be kind, gentle and forbearing to all, and in all our domestic concerns, let our smiles and kind words gladden the hearts of those that are made dear to us by the ties of earth and heaven. In ministering to the happiness of others, we shall secure our own; but by being fretful and passionate, we render ourselves miserable and all those with whom we associate. Reader, if you are kind, and gentle, and affable in deportment to all, you are blessed; if you are not so at all times, try the experiment, and God will bless your efforts with the richest cup

of blessing. It may cost you many days, even years of toil, to overcome this soul-destroying enemy; yet "God will bring you off conqueror, and more than conqueror through him that loved us, and gave himself for us." But if you strive not, and gain not the victory, for these things God will bring you into judgment, and where he is, you can never come. Have a care every day, that nothing put you into a passion; do nothing with an over-eagerness of mind; and be ever on your guard against sudden accidents. And this can never be obtained, but by committing yourself and your affairs into God's hand and care every day; believing that he governs all things wisely, and will ever do that which is best for you.

HOPE.

THERE is not a word in our language which has more numerous or more pleasant associations than *Hope*. With its sound, even as it falls on the ear, we are accustomed to link all the grateful emotions and joyful sensations which its indulgence never fails to impart, and on account of which it is considered one of the dearest that man can possess. Wherever we turn our eyes among mankind, we see the influence of Hope.

It begins with the first dawning of reason, and ends only with life itself. Before the eye of youth, hope spreads the future, clothed in all the glowing colors of imagination; it promises him happiness, honor and fame, and tells him that his most ardent expectations shall be more than realized. Would he climb the hill of science and stand first among her votaries, hope whispers in his ear that nothing can be more easy. Does he long for wealth, hope says it shall be his. Would he be a distinguished man, and have his name written on the pages of history, hope tells him that this, and more than this, shall be attained. It is hope that imparts to youth half its happiness and vivacity, and to age a blessed assurance. Take it away, and you leave a blank which it would be impossible to fill.

If we survey the busy world around us, we shall see no one who is not influenced, in one way or another, by this all-pervading emotion. Each has some favorite object in view, which it leads him to believe he can accomplish. Each one is engaged in some occupation which he thinks most likely to aid him in accomplishing and realizing his wishes. Look at the man of business — see how entirely absorbed he seems to be in the pursuit of gain, with what anxious looks he hurries to and fro, and with what eagerness he embraces each oppor-

tunity of increasing his treasure. Watch the changing outlines of his troubled brow, and if you can read the thoughts thereon inscribed, you will find that the subject which is ever uppermost in his mind, is the hope of gain. The student, whose whole soul is in his studies, is found bending over his books from morning till night; he consumes the midnight oil in search of knowledge, and thus in his ardent thirst changes night into day. It is the hope of one day standing first in the ranks of literature that enables him to plod along from day to day, storing his mind with the choicest gems that learning can afford, even while he is admonished that disease is making encroachments upon his system.

Again: look at the man whose god is ambition. He may be a statesman, a warrior, or an author, it matters not; see with what perseverance he surmounts every obstacle that lies in his way to eminence, and how constantly he struggles on, it may be against persecution and bigotry, carefully removing every impediment, until finally he attains the summit of his hopes, and sees no one above him whose honors he can snatch. He looks proudly on, and views all his competitors toiling far below him, surveying with wistful eye the eminence on which his feet are securely placed. What is it, we may ask, that urges him forward? It is the hope of fame. In our adversities and troubles, when all whom we esteemed as our friends have forsaken us, hope displays its real value — it cheers us onward, gives us promises of better days, and whispers in our ears that all may yet be well.

The prisoner in his cell, who is, perhaps, to die on the morrow, still has hope, and it is not until the fatal rope has put an end to his existence, that it forsakes him. That aged sire, whose locks are whitened by the snows of fourscore winters, still thinks he may live a few years longer, and death's arrow may pierce his bosom while hope is still glowing there. One would think that old age, after having witnessed so many wishes unrealized, and expectations blasted, would no more listen to her syren song, but the dying man still clings to this eternal principle, this blissful passion, and as the lamp blazes brightest when gleaming its last, its spark flies heavenward, and is rekindled upon the altar of eternity.

Hope is the connecting link between the past and the future. It is a constant prophet, save that it always dresses out events to come in a gaudy attire, which fades and blackens when the wheels of time bring us to the consummation. Were it not for this earnest of the future, this principle implanted in the breast of man, he would have nothing for which to live, nothing to induce him to drag out a miserable existence. Never is hope so wild and imaginative, and we may

say deceitful too, as in youth; never so sober, so true, so stable, as in age.

Although hope is often delusive, yet in the greatest misery, the least flickering ray of sunshine pouring into the caverns of the heart, revives the drooping soul, and excites action, as when some precious gem under the sunbeam flashes its radiance round the darkened cell, and springs into multiplied existence. Then hope on, frail mortal, what though thy path be rugged and strewed with thorns? Thou hast only to persevere, and thy reward awaits thee. Many days and nights, perchance years, hast thou struggled with adversity. Thou hast said in thine heart, "Woe is me — wherefore was I born?" Hope then whispered, persevere! before thee lies thy reward. What though thou art poor, despised by those, it may be, who are thy inferiors in all save wealth! What matters it, that thy short life is exposed to the rude blasts of adverse fortune, if, at last, thou art crowned with immortality, which those who rudely push thee from them, think not of! Hope on, then, in thy poverty — be honest in thy humility — aspire to be truly great by being truly good. Hope carries its consoling rays into the recesses of the dungeon, smiles serenely on the bed of sickness, sustains in every period of life, and sheds its grateful radiance around the pillow of the dying. It blooms in every season of existence, and, like the evergreen, it preserves its verdure throughout the year. Hope is a secret instinct to draw our minds to future happiness.

Our Heavenly Father has given us a hope of that blessed immortality, where the troubles and cares of an unsatisfying world will forever cease, and the soft and balmy breath of an eternal spring soothe the spirit's soft repose in the haven of eternal rest, where we shall again meet with those on whom death laid his withering hand — the fairest buds of our earthly love expanded into lovely flowers, and hear again the voices of those dear ones who shared with us our earthly sorrows; a meeting that shall never be dissolved, a reunion in the presence of God, where death can never come, or rob us of our dearest friends.

How true, then, the sentiment of the apostle, that "Hope is an anchor to the soul!" How bright and beautiful is that hope that meets the shadowy future without fear, which comes to us amid storms and darkness, to tell us we have a friend in our dear Redeemer that will never forsake us in the hour of misfortune, sickness, or death! We feel the necessity, then, of that blessed hope, which sheds its balmy influence over the silence and loneliness of the human heart, and building up anew the broken altars of its faith and reviving again the drooping flowers of its desolate affections, in the hope of forgiveness, and in the promise of that blessed Saviour, who has

said, "He that believeth on me, though he were dead, yet shall he live."

But blessed be God that the righteous hath hope in his death, through His dear Son, our Lord and Saviour, Jesus Christ.

Contemplate, through the unnumbered saints that have died, the soul, the true and inextinguishable life of man, charmed away from this globe by celestial music and already respiring the gales of eternity. If we could assemble in one view all the adoring addresses to the Deity, all the declarations of faith in Jesus, all the gratulations of conscience, all the admonitions and benedictions of weeping friends, and all the gleams of opening glory, our souls would burn with the sentiment which made the wicked Baalam devout for a moment, and to exclaim, "Let me die the death of the righteous, and let my last end be like his;" and when *hope* shall fold her golden wings on earth, then shall we behold, through faith, that hope which grows stronger in death.

The venerable Matthew Wilkes called upon the Rev. John Wyatt, his colleague in the ministry, who was at the point of death. "Well, brother Wyatt," said the good old man, "I have sometimes heard you say in the pulpit, that if you had a hundred souls you could venture them all on Christ; can you say so now?" The dying saint, though worn nearly to a skeleton and almost suffocated with phlegm, made an effort to speak, and with his eyes almost flashing fire, replied, "Blessed be God, a million! a million!" and in a few moments he expired.

Without hope, how dreary would be the world; appearing to the care-worn pilgrim one wide desert, all the paths of which are surrounded with misery, beset with trouble, and embittered with sorrow! But hope lights us on our way; when darkness lowers and gloom oppresses, hope strengthens our faltering steps, collects our scattered senses, and presents to our view a pleasing prospect lying before and just within our reach; we spring forward with alacrity, and often pass our lives in eager pursuit, with as much pleasure as if we had attained the object of our wishes. Hope raises the sinking heart and restores the courage which begins to droop; and each time I feel the magic influence of her rays, I will bless thee, Oh! my God, and thank Thee for the daily benefits I receive, as well as for those reserved for me at a future time. Blessed forever be thy Divine mercy, which permits me to hope that when time here shall be no more, my glad soul shall quit these narrow confines, to repose in the bosom of its Creator, through the countless ages of eternity. Were it not for this certainty of immortality, this fond hope of eternal life and happiness, few would be the incitements to virtue, and weak the

inducements to mental improvement; when oppressed by care and weighed down by misery, we should have little encouragement to continue longer in a world checkered by misfortune; or, did affluence favor us, we should be tempted to indulge in the thoughtless round of continued dissipation. But with the expectation of a future glorious state of existence, we can smile at care and trouble, arm ourselves against the fleeting pleasures of this life, and pity the deluded disciples of folly and dissipation. There is a deep spring of joy in hope to the human breast, whose waters, while life remains, never cease to flow. It is this that renders existence tolerable, and even precious to the bereaved and desolate wayfarer as he treads his downward path to the grave.

When all around is dark, and want and wretchedness stare us in the face; when in the past all is barren, and in the future there is no ray to light the wanderer in his pilgrimage, there is still a spirit of hope within him, teaching him to gather the few flowers that yet remain within his reach, though they be of fading beauty and dying fragrance. The faint glimmerings of the pale-faced moon, on the troubled billows of the ocean, are not so fleeting and inconstant as the fortunes and conditions of human life. We one day bask in the sunshine of prosperity, and the next, too often, roll in anguish on the thorny bed of adversity and affliction. How many are doomed to roam in this wide world alone, unpitied and unknown? What can cheer the mind, raise the drooping soul, calm the agitated bosom, and throw a cheering light on the future? It is hope! sweet hope! thou ministering spirit of Heaven, who visiteth the abodes of misery, wipeth the tear from sorrow's eye, chaseth away the anguish of despair, sweeteneth the cup of affliction with thine all-soothing and syren voice. And when the solemn hour of death shall come, and the lamp of life but faintly glimmer in the feeble frame, hope shall bid us look to a better and brighter world than this, to live and reign with the blessed Redeemer in never-ending joys; such joys as "ear hath not heard, nor eye seen; nor hath it entered into the human mind to conceive," that endless bliss which is prepared for those who love and serve God.

CHEERFULNESS.

CHEERFULNESS freshens the heart and makes it healthy and vigorous. The gloom and shadows that pass over the mind make us wretched and miserable, but the influence of sweet cheerfulness

passes over it like pleasant summer breezes, making creation glad. The heart would be cold and desolate, were it not warmed by the genial, sunny rays of cheerfulness. Spring with its smiles gladdens the earth, but when summer comes, nature bursts forth into a glow of cheerfulness that makes the very face of all things shine with beauty and fruitfulness. This sentiment imparts elasticity to the mind, and exerts over the disposition and intellect a powerful influence in preserving health. It throws a charm over all the acts of life, and is the companion of hope, spreading its genial rays over the heart, amid the trials and difficulties of the world. Its true votary does not yield to the troubles which he knows are incidental to existence. When the storm bursts over his head, he adapts his mind to his condition, and reflects that if it rage with violence, it will, probably, the sooner pass away. If he embarks in unlucky speculation, he treasures up his experience, and gains in wisdom what he loses in wealth. Success in love blesses him with joy. All his interests, all his hopes, all his pleasures, center in the object of his affection. He gathers around her the dearest wishes of his heart, and clings to her, with sweet devotion, through all the various adventures and misfortunes of life; though he be overwhelmed for a time with sorrow, yet it leaves him resigned and cheerful under the dispensation of Providence, and by divesting the world of half its charms, makes him the more ready to quit it without complaint.

The use of such a thing, although not widely acknowledged, is yet sensibly felt by all who are in the circle of its influence. He possesses the art to call up sparkling looks and merry smiles around him; of charming away, although for a moment, the bitterness of passion, or the darkness of grief; and of leaving an impression of happiness, however transient, on hearts which were before corroding with malice, or sinking into despair. The only necessary requisites for a cheerful disposition are such as every man of common intelligence can acquire.

To be strictly honest in all our dealings, and benevolent in all our intentions; to live between the extremes of labor and repose, and partake but moderately of the innocent pleasures within our reach; to love and practice truth and honor; to cherish kindness and affection for all our fellow-creatures, and to love God with our whole hearts — which indeed make up the happiness of man — are plain precepts of reason, simple to comprehend, and easy to adopt. All extremes are fatal to peace or health. The man who must be always soaring, or who requires perpetual rest; who runs to revel among the stars, or grovels in the dust; who pants for some wild or intense excitement, or desires to shun all the cares and anxieties which will

ruffle the calmest bosom, may, perhaps, occasionally realize great joy, or slumber in seeming content, but will not be happy. The first, however brilliant his triumph, or lofty the summit of his fame, will probably soon sink again to the cares of mortality; and when we consider the revolutions of time, and the propensity which human affairs possess, after any uncommon convulsion, to fall back into the general arrangement of things, as water forced up will naturally seek its own level, we may justly conclude that heroes, statesmen, and lucky adventurers, whose hopes are founded altogether on their transitory success, will enjoy less true cheerfulness than the poorest laborer, who knows himself, loves his God, and strives to perform all his duties as well as he can.

As for the hermit, and there are few exceptions, his dream of solitary bliss soon fades when put to the test. The heart, uninspired by hope, or unagitated by fear, languishes into misery, almost insufferable, and all tortures of the rack, or the terrors and anguish of a violent death, are much more easily borne than the solitude of even a few years. I would rather possess a cheerful disposition, inclined always to look on the bright side, than, with a gloomy mind, be mas ter of an estate worth ten thousand a year. Cheerfulness is a spring of power and of pleasure, alike to our physical, our mental, and our moral natures.

Cheerfulness, like most other talents and merits, is, to a large extent, the subject of voluntary culture; and the preservation and development of it should be looked upon as a duty which we owe alike to ourselves and to society. Those who, like the generality of men, have been in the custom of yielding up their tempers as vanes to be blown about by the shifting courses of fortune which way they will, would be surprised to know how much one's disposition and mood are under one's own control; how much the luster of the outward scene may be affected by the light within our bosoms. We may *set* our spirits to cheerfulness and keep them so, independently of the conditions of outward circumstances. And this is the true dignity, and happiness, and piety of man, to live above the shifting and dashing tides of the world's incidents and humors, to bring our nature into harmonious union with the great permanent type of human excellence.

Cheerfulness quenches blows, it blunts arrows, it rounds the edge of the sharp sword; it secures pure breathing in the foul air, easy digestion, and refreshing slumber. To others it is as the sun to the material world; flashing, life-giving light and warmth, and wafted upon by breezes which are the dispensing medium of hope and vigor. Gloom of spirit acts upon the intellectual faculties like a paralysis; the perception is dimmed, the invention is deadened, the judgment is

perplexed, the will is unnerved. Who, in such a moment, has not felt, when some unexpected occurrence of good fortune, or the voice of one long absent, or a burst of music, or a gleam of light blazing for a moment over the landscape, has struck, as with the prophet's rod, the rock of his wounded feelings, and made the waters of sympathy once more gush forth; who has not then felt the power of cheerfulness coursing like an electric fluid from one compass of his being to another, swelling his finite life to the dimensions of that blessed hope which points to that home beyond the grave? How sweetly does it retain its serenity amid the storms and trials of life, when overhung and shadowed by sorrow or peril! How does it cheer even the infirmities of old age, in the sweet remembrance and pleasant anticipations of meeting again those dear ones, whom we have loved on earth, where we shall be separated no more forever, soothing the declining hours of life, as the sun at evening lines the thickest clouds with her golden beams! And how does such a spirit as this give evidence of faith in Christ, and of delightful trust in the Divine Father, corresponding with all that is sublime in holiness and grand in self-devotion, and powerful and uplifting in belief of the truth! How sweet to feel the assurance that after life's day is done, we shall enjoy rest and peace in Heaven! How tranquil and how happy are those who have this sunny spirit, the charming influence of Christianity? that sweetener of life, that beautiful essence pervading our thoughts; that fruit of gentle submission to the divine wisdom; that shadow of God's home, the light emanating from His holy spirit! In Christ Jesus, our blessed Redeemer, through faith in Him and the reception of His spirit, and joyful trust in His redemption, we may all find this cheerful hope.

Along with cheerfulness we should cultivate humility. Humility has no connection with pensive melancholy or timorous dejection. While the truly humble guard against the distraction of violent passions and inordinate cares, they cherish a cheerful disposition of mind. There can not, indeed, be genuine cheerfulness without the approbation of our own heart. While, however, we pay a sacred regard to conscience, it must be enlightened and directed by reason and revelation. And happy are the individuals who can say our rejoicing is this testimony of our conscience, that in "simplicity and godly sincerity, we have had our conversation in the world." An approving mind will contribute greatly to cheerfulness, and that equanimity which results from it, from trust in God, and from the hope of a blessed immortality, is equally remote from sour dissatisfaction, desponding melancholy and frivolous hilarity. It smoothes our path and sweetens our cup, rendering duty easy and affliction light.

If we are cheerful and contented, all nature smiles with us, the air seems more balmy, the sky more clear, the ground has a brighter green, the trees have a richer foliage, the flowers a more fragrant smell, the birds sing more sweetly, and the sun, moon, and stars all appear most beautiful. Cheerfulness bears the same friendly regard to the mind as to the body; it banishes all anxious care and discontent; it soothes and composes the passions and keeps them in a perpetual calm.

DESPAIR.

WHEN man had sinned, and the very elements seemed to sympathize in a lament for his lost innocence; in that hour of dismay, when seraphs forsook, and God himself turned away the light of His countenance, one bright spirit lingered, nor would desert man in this his extremity. With tender assiduity and many a winning token of kindness did she strive to wean man from his sorrow. She prevailed, and by degrees his mind seemed to lighten of the weight which oppressed it, and confidence resumed her seat — "The spirit joyed, 'Hope' enchanted smiled and waved her golden hair." Since then her home has been with the children of men; and ever with the same winning care has her syren song beguiled their hearts of sorrow, and buoyed up their sinking spirits.

But there are times when she comes not to the distressed. There are hearts pierced, which her gentle hands bind not up. There is a gloom which her light scatters not, and an anguish which her voice does not soothe. We are in loneliness, and no one is near; we grope in darkness, yet no friendly hand stretches out to save; we feel for something to which we may cling — all is empty; we shout in agony, yet no guiding voice replies — all is still. It is the feeling of despair, its loneliness, its utter solitude.

Give to man but the semblance of hope, and phantom though it may be, he will follow its guidance as eagerly as does the child pursue the gaudy insect. Give to him but a twig to cling by, and he will climb, aye, though frail the tenure, and the grave beneath. But quench the last spark of hope, and in despair he will fall without a struggle. Let the storm beat ever so fiercely upon the soul, yet, if but a single gleam finds its way to cheer and warm, it will revive; but let darkness gather around, and it sinks to the dust.

The feeling of which we speak is an indefinable sensation. We see its effects, and we know that it exists. We have all, at times, felt its

wretchedness, its misery. It is not disappointment; our hopes may have been baffled, but we trust still.

One stay may have been withdrawn, yet other means of support buoy up. It is not sorrow; for even it may be blended with some pleasurable emotion which will beguile its sting, or the hand of time may soften and mellow, and it will cease to grieve. But there is a blow, the weight, the pang of *despair*—its touch weakens the strongest arm, and unnerves the stoutest heart.

The wealth which the labor of years has heaped together, may be swept away in an instant; we know that gold is but dross, and that riches are unstable. Pleasures, which once delighted, may forsake us; we know that they are all vanity, that a touch may shatter. Fortune may turn her smile to a mockery, or *Fame* delude with unreal visions; we know that the former is a fickle goddess, and the latter a fanciful vagary, a sound that dies in the breathing.

Against all the losses and woes which throng thick upon us, we may bear up with firmness, but another blow follows — the friend in whom we had centered our affections, and to whom we had unbosomed every sorrow, and with whom shared every joy; that being whom we had warmed and cherished, turns his viper fang upon us; or when some loved form has entwined itself around us, until it has become linked with our being, death wrenches it away, and we feel that we had taken a flower to our bosom only to perish; it is the last drop, and the waters of bitter despair overflow. She comes to the heart of the prisoner as he enters his solitary cell, and the last bolt is drawn; the sound of the receding footsteps dies upon his ear, and in sickness of soul he sinks down in utter hopelessness. She is with the wrecked mariner when the last lone plank which promised friendly support has vanished, and his heart dies within him. Already the sound of waters is in his ear, and he "feels what pain it is to drown." Her wan and haggard form hovers around the couch of the dying when the last remedy has failed, and death's grasp is firm. It speaks in the dim eye, the pale and tremulous lip, and the faint and more faintly throbbing heart. Nor does its spell work upon the weak and timid alone; the mighty have bowed to it — at its touch, the cheek of courage pales, the arm of strength falls.

"Hope withering flies, and mercy sighs farewell." There are dark hours in the history of every human being, periods of despondency and gloom, when life seems without a solitary ray of brightness, and the future is shrouded in mist and melancholy. At such times the spirit is depressed, the soul within is involved in shadows, and it is in vain that we turn and turn and endeavor to avoid the onerous thoughts that crowd upon the brain. They force themselves upon us, and all

our efforts to shake off this feeling of despair of the moment, are idle and fruitless. Phantom shapes flit before the imagination, dismally foreboding the loss of friends; unpleasant thoughts obtrude themselves upon us, and a mysterious feeling passes like a cloud over the spirit. These often come upon the soul in the busy bustle of life, in the social circle, in the calm and silent retreats of solitude, to remind us of imprudent conduct. At one time, perhaps, caused by the passing of a single thought across the mind; at another, a sound will come booming across the ocean of memory, gloomy and solemn as the death-knell, overshadowing all the bright hopes and sunny feelings of the heart. How many in this world have felt these stings! How many have cast their love abroad on hearts that did not appreciate their kindness! How many thousands have sought the silent enclosures of the dead, and gazed with anguish of soul upon the grave of some dear departed friend, whom they have treated unkindly! Oh! these are thoughts beyond control, which rack the human heart, and swiftly loose the pent-up fountains of an anguished soul, and cause bitter tears to fall fast.

Despair is the name by which we express the extremity of mental depression, against which the mind fails for a period to react. Through this dreadful feeling no ray of hope, no sunbeam of joy, breaks in upon the darkness of the soul. To one who has reached this state of utter despondency, life is no longer desirable; the charms of nature and of art call forth no throb of delight in the dark spirit, and the cheerful earth is a gloomy and barren wilderness.

I observed once a poor widow, as she slowly turned the corner of the street, stop and wipe away the tears that were fast chasing each other down her feeble cheek; and my heart took an interest in her care-worn face, for her affliction seemed great, though I knew not the cause. I followed her, unnoticed, to her humble habitation. I saw her enter, and heard her bestow a blessing upon three poor, shivering infants, who hailed her return with clamorous joy. She divided among them the scanty portion of food which her day's labor had been able to procure, and I saw her turn away and weep in silent despondency that it was so little. I resolved to inquire her history, for she appeared like one who had seen better days. She had entered life with fair prospects, had married early, and had lost her husband, whom she tenderly loved. He had been unfortunate in his business, and at his death was unable to leave her an adequate support for herself and three children. Misfortunes had continued to pursue her. She had talent, but ill-health and poverty prevented her from exercising it. She had industry, but could find very little to employ it. She called

at the house of the rich, but they "could not afford to employ her;" she was too delicate for hard labor, and her feelings were too refined to allow her being long importunate. She bore her sorrows, her privations, her hardships, and the mortification attendant on a condition like hers, in silence, until grief settled down into dark and deep despair. The friends of her prosperity had forgotten her in her misfortunes. She had nothing to attach her to life, except those desolate infants; for their sake she tried to support her miseries, and to struggle on yet a little longer.

The thoughts of leaving them exposed to a world which she had found so pitiless, shook her fortitude and destroyed her mind, and she is now an inmate of the lunatic asylum. How often does the remembrance of these poor children come to that broken heart, and she cries, "Heavenly Father, who tempers the wind to the shorn lamb, when shall I again see my dear husband and children?" This is no tale of fiction. There are thousands similar in this land of liberty, peace, and plenty. In this refined and enlightened age talent is often neglected, industry is too frequently discouraged, virtue unnoticed, and pride and riches seemingly triumph. How many delicate and sensitive hearts, who labor under "that poverty and sorrow, which patient merit of the unworthy takes," sink into despair! How often do circumstances of adversity throw around the spirit a withering influence; how often draw from us reproaches; not having a submissive will, how often does discontent plant itself in the breast, excluding every good that might flow from these missions of trial? Many as are the shadows that flit across the horizon of earthly happiness, where does not shine a star, where does not speak a still small voice to the mourner's heart, to light the gloom and minister comfort? There is a balm for every wound, a haven of rest where the sorrowing heart may find relief. Our lot may be cast amid the pure sunshine of an approving conscience, with not a cloud to intercept, and the pathway of our pilgrimage may constantly be illumined with the rays of righteousness and peace. Desolate, indeed, must be the heart that has no source of comfort, no rock to rest on amid the storms that beat around it, no firm foundation on which to build its hope of final triumph and deliverance. How can the vicissitudes of life be borne when there is no friend to share the toil and burden? When the tempest gathers and clouds roll over the soul, where may rest be found, in the moments of dejection, but in Him who knows every infirmity, who can "satisfy the longing soul," and say to the raging waves, "Be still?" There is no affliction but His love can soothe and alleviate, and no desire that His grace can not supply. He at last wipes away every tear, and

guides the poor afflicted one to that haven of rest where there shall be joy and bliss for evermore, "where the wicked cease from troubling, and the weary are at rest."

GRIEF.

THE damps of Autumn sink into the leaves and prepare them for approaching decay; and thus insensibly are we, as years close around us, detached from our hold on life by the gentle pressure of recorded sorrows. The first thing to be conquered in grief, is the pleasure we feel in indulging it. There is but one pardonable sorrow, that for the departed. This pleasing grief is but a variety of comfort; the sighs we heave are but a mournful mode of loving them. We shed tears when we think of their departure, and we do so, too, when we think of reunion with them. The more intense the delight in the presence of the object, the more poignant must be the impression of the absence. These associations with the past do not excite sorrow, but to an affectionate mind are sorrow. The morality, then, which rebukes sorrow, rebukes love. There are, doubtless, cases not unfrequent, in which the mind is unduly overpowered by affliction, in which the tranquillity of the reasoning powers is utterly overthrown, and the energy of the will entirely prostrated. Here, beyond controversy, is a state of mind morally wrong, for God never absolves us from our duties, however He may, for a time, overshadow them by grief. But to rebuke the feelings of grief in such a case, is to cast the censure in the wrong place; it is not that the sorrow is excessive, but that other emotions are defective in their strength. The wise interpreter of his own nature will let his mourning affections alone. To interfere with them would be to wrestle with one's own strength; but he will draw forth, into prominent light, sentiments now sleeping idly in the shaded recesses of his mind. He will summon up the sense of responsibility, to rouse him with the spectacle of his relations to God his father, and his brother man; to recount to him the deeds of duty and the toils of thought, which are yet to be achieved ere life is done; to show him the circle of high faculties which the Creator has given him to ennoble and refine and keep ready for a world where thought and virtue are immortalized. He will call forth his affections for the living who surround him, and whom yet it is happiness to love and his obligation to bless, and these sympathies will be fruitful work for his hands, and interests, and refreshing to his heart; here are

some of the invitations to the exercise of benevolence, to bid the drooping soul look up. And the sufferer will evoke the spirit of Christian trust and hope; invoke the spirit of this trust, and though sorrow may not dry its tears, it rises to a dignity above despair.

Heaven and God are best discerned through tears; scarcely, perhaps, discerned at all without them. The constant recurrence of prayer in the hour of bereavement and the scenes of death, suffices to show this. Yet is this effect of internal distress only a particular instance of this general truth, that religion springs up in the mind wherever any of the infinite affections and desires press severely against the finite conditions of our existence.

Sorrow is the noblest of all discipline. Our nature shrinks from it, but it is not the less for the fostering of our nature. It is a scourge, but there is healing in its stripes. It is a chalice, and the draught is bitter, but strength proceeds from the bitterness. It is a crown of thorns, but it becomes a wreath of light on the brow which it has lacerated. It is a cross on which the spirit groans, but every Calvary has an Olivet. To every place of crucifixion, there is likewise a place of ascension. The sun that was shrouded is unvailed, and Heaven opens with hopes eternal to the soul which was nigh unto despair. Even in guilt, sorrow has sanctity within it. Place a bad man beside the death-bed, or the grave, where all that he loved is cold, we are moved, we are won by his affection, and we find the Divine spark yet alive which no vice could quench. We can not withhold our admiration, and we are compelled to give him our respect.

Christianity itself is a religion of sorrow. It was born in sorrow, it was incarnate in sorrow, in sorrow it was tried, and by sorrow it was made perfect. The author of Christianity was a man of sorrows and acquainted with grief. Alone did he tread the wine-press of agony, until the last drop of agony was crushed out. Alone did he walk on the waves of affliction, in the dark and stormy midnight of solitude and woe. With sensibilities so quick and gentle, and so loving; with a perfect soul, to which wrong and wickedness must have caused unspeakable pain, yet to which the depths of wrong and wickedness were exposed; with sympathies alive to the smallest suffering, and yet which clasped in their wide embrace all humanity in its wants and capacities; heavy, indeed, was the burden which his spirit had to bear. Not on one occasion only, but often, we conceive him bathed all over with the cold sweats of a terrible anguish; often we may hear him exclaim, "My soul is exceeding sorrowful, even unto death." But this sadness is exalting. A baptism of suffering is awarded to every man who strives for the higher life. Since Christ wept over Jerusalem, the best, the bravest who have followed

him in good will and good deeds, have commenced their mission alike in suffering. Sorrow is not to be complained of; it is the passport by which we are to be made acceptable in that house where all tears shall be wiped away. It has godliness in its power, it has joy within its gloom, and though Christianity is a religion of trials and afflictions, it is not less a religion of hope; it casts down in order to exalt, and if it tries the spirit by affliction, it is to prepare it for that great reward "that eye hath not seen, nor ear heard," nor has it entered into the mind to conceive. Though our affections are blighted, and our expectations in this world disappointed, we know that our Heavenly Father has the power to make all these melancholy scenes of life of salutary influence, and conducive to the soul's eternal health, and point, with unerring truth, the bright way up to the mansions of felicity in our Father's house.

"Sure the last end
Of the good man is peace! How calm his exit!
Night dews fall not more gently to the ground,
Nor weary, worn-out winds expire so soft."

It is utterly impossible that persons of a dejected mind should enjoy health; those who would live to a good old age must be good-humored and cheerful. Misfortunes are the attendant consequences of life, therefore it is our duty to our Heavenly Father to submit and bear them with fortitude and resignation to His will.

The mind is to be relieved by change of scene; innocent amusements, traveling, cheerful associates, and such subjects as engage the attention and dispel the gloom which misfortune has cast over it. Change of ideas is as necessary for health as change of posture. When the mind dwells long upon one subject, especially of a disagreeable nature, it injures the whole body. How many thousands of constitutions have been ruined by family misfortunes or other causes of grief? Do you ask the remedy? Religion. The blessed Redeemer has opened a fountain where every sorrow may be washed away — the waters of life, where all may freely drink and live. We have only to bear for a season our trials and afflictions; we are heirs of glory. Why then cling to earth, and turn our eyes away in gloom from that bright inheritance, which, in His tender mercy, is offered? "Come unto me all ye ends of the earth, and be ye saved," "without money and without price" Then grieve not, all will yet be well.

JEALOUSY.

THIS fiend of human happiness, which destroys thousands of families and poisons the atmosphere of domestic bliss, dwells in the abodes of the rich and poor, the public functionary, and the private citizen. It has invaded all classes, from the humble peasant in his cottage to the pompous king on his throne. It has plucked the rose from the cheek of beauty, embittered the joys of the faithful wife, and to the confiding and affectionate husband destroyed his peace forever. Treason, murder, and suicide move in this demon spirit, this prime mover of dissensions, the soul of anarchy, the fuel of party spirit, the instigator of revolution, the bane of public good, the incubus of religion, the parent of wars, setting nations in commotion, and often sinking them into the dark abyss of irrecoverable ruin. Jealousy, of all the passions, is that which exacts the hardest service and pays the bitterest wages. Then let me implore you, as you value every earthly happiness and desire peace, banish from your mind this demon spirit, and cultivate it not, for it delights in human misery, and endangers the peace of every family.

While practicing medicine in Virginia, I was called at night to visit the wife of a man residing some ten miles in the country, in a wild and desolate tract. I perceived among the trees, the ruins of an old cottage, which I entered. To my great surprise it was inhabited, and unfortunately I arrived too late—she was dead. I found her lying upon a miserable bed, surrounded by her two weeping children. Her jealous husband had, in a fit of rage, killed her. She was one of those magnificent figures which continue beautiful even in the bosom of death. She had a large aquiline nose, whose contour, so expressive at once of elevation and tenderness, I never can forget. I quitted the mournful spot with feelings of deep sorrow for this wretched family, and felt an impulse of melancholy curiosity to learn the cause that induced this unfortunate man to commit this horrible deed. I was told that the jealous husband, R***, had found, concealed in his wife's trunk, the likeness of a young man who had, years previous to her marriage, been a suitor of hers in a little town in which they resided. On that very day he carried her off to this ruined and lonely cottage from her friends, and lived in the solitude of these woods for nearly three years. He uttered not a syllable; but, in answer to all her entreaties, he coldly and silently showed her the miniature, which he always kept about his person. He thus passed nearly three years with her. At length she died from the effect of a blow inflicted by this miserable wretch. Her mother, when she heard of the fate of her

child, died of a broken heart. The husband made an attempt to shoot the owner of the miniature, missed him, fled to New York, left on board a ship, and has never been heard of.

It is a bitter consciousness (none can tell how bitter but those to whom it has been given), when we are awakened from our long-cherished confidence in that being we have devotedly loved, and know that from henceforth it may never be indulged in again. All those beautiful visions we so fondly gazed upon in youth, fade from our view, and the demon, jealousy, takes possession of our minds and destroys that confidence and peace which can rarely, if ever, be recalled.

JOY.

THIS emotion is founded on delightful occurrences, and causes a universal expansion of vital action. The blood, under its animating influence, flows more liberally throughout the whole system, the countenance becomes expanded, its expression brightens, and the whole surface acquires the ruddy tint and genial warmth of health. The body also feels buoyant and lively. There is a consequent disposition to quick and cheerful muscular motions; to run, to jump, to dance, to laugh, to sing; in short, every function would seem to be gladdened by the happy moral condition. The common expressions, therefore, such as "the heart is light," or "leaps with joy," "to swell with pride," "to be puffed up with vanity," "to be big with hope," are not altogether figurative, for the heart does bound more lightly, and the body appears literally to dilate under the pleasurable affections of the mind.

Nothing contributes more effectually to the healthful and harmonious action of our organism, than an equal distribution of the blood to the various parts, and especially the free circulation of this fluid in the extreme vessels of the surface. A full, bright and ruddy skin is always ranked among the surest tokens of health. The nervous system must also experience a salutary excitement under the agreeable moral emotions. But I need not further dwell on what will be so apparent to all, the wholesome influence of a happy state of mind upon our bodily functions. Love, hope and joy promote perspiration, quicken the pulse, promote the circulation, increase the appetite, and facilitate the cure of diseases.

As, however, excess of feeling, whatever may be its character, is always prejudicial to health, and not unfrequently to life, even felicity itself, if it exceed the bounds of moderation, will oppress, and some-

times even overwhelm us. When pleasurable feelings are extravagant, they become transformed into those which are painful, or, in other words, the extremity of pleasure is pain. Great joy is sometimes expressed, like grief, by sobbing and tears.

Extravagant and unexpected joy unduly excites the nervous system, increases unnaturally and unequally the circulation, and occasions a painful stricture of the heart and lungs accompanied with sighing, sobbing and panting, as in severe grief. Under its influence, too, the visage will often turn pale, the limbs tremble and refuse their support to the body, and, in extreme cases, fainting, convulsions, hysterics, madness, temporary ecstasy or catalepsy, and even instant death, may ensue. If the person be of a delicate and sensitive constitution, and more especially if he labors under any complaint of the heart, the consequences of the shock to the nervous system of sudden and immoderate joy will always be attended with exceeding hazard. I feel confident, from a long experience in my profession, that sudden joy is even more hazardous to life than sudden grief, and that there are more numerous instances of fatal effects from the former than the latter passion.

Diagoras, a distinguished athlete of Rhodes, and whose merit was celebrated in a beautiful ode by Pindar, inscribed in golden letters on a temple of Minerva, died suddenly from excess of joy on seeing his three sons return crowned as conquerors from the Olympic games.

Dionysius, the second tyrant of that name, is recorded to have died of joy on learning the award of a poetical prize to his own tragedy. And Valerius Maximus has ascribed the death of Sophocles to a similar cause.

Chilo, a Spartan philosopher, called one of the seven wise men of Greece, on seeing his son obtain a victory at Olympia, fell, overjoyed, into his arms and immediately expired.

Pope Leo X., under the influence of extravagant joy at the triumph of his party against the French, and for the much coveted acquisition of Parma and Placentia, suddenly fell sick and died.

M. Juventius Thalma, on being told that a triumph had been decreed to him for having subdued Corsica, fell down dead before the altar at which he was offering up his thanksgiving. Vaterus relates that a brave soldier, who had never been sick, died suddenly in the arms of an only daughter, whom he had long wished to see.

A worthy family being reduced to poverty, the elder brother passed over to California, acquired considerable riches there, and returning home, presented his sister with great wealth and rich jewelry. The young woman, at this unexpected change of fortune, became motionless and died.

The famous Fouquet died on being told that Louis XIV. had restored him to liberty. The niece of the celebrated Leibnitz, not suspecting that a philosopher would hoard up treasure, died suddenly on opening a box under her uncle's bed, which contained sixty thousand ducats.

A clergyman, who, at a time when his income was very limited, received the unexpected tidings that property had been bequeathed to him, amounting to three thousand pounds a year, in great agitation at this statement, returned rapidly to his house, and, on entering the door, dropped down in a fit of apoplexy, from which he never recovered.

If the extreme of joy follow unexpectedly an emotion of an opposite character, the danger will be heightened. It is recorded of two Roman matrons, who, on seeing their sons whom they had believed to be dead, return from the famous battle fought between Hannibal and the Romans, near the lake of Thrasymenus, and in which the Roman army was cut to pieces, passed suddenly from the deepest grief to the most vehement joy, and instantly expired.

Examples have likewise happened where culprits, just at the point of execution, have immediately perished on the unexpected announcement of a pardon. We may hence draw the important practical lesson, that the cure of one strong passion is seldom to be attempted by the sudden excitement of another of an opposite character. Violent emotions are, as a general rule, to be extinguished gradually and cautiously. Rapid and extreme alternations of feeling, and indeed all sudden extremes, are repugnant to the laws, and consequently dangerous to the well-being of the animal economy.

This will show you the great importance, even in reference to bodily health, of an habitual cultivation of the pure, and generous, and amiable affections of our nature. When kept within due bounds, they become sources of agreeable and salutary excitement, but when carried to extremes they may be attended with serious and even fatal consequences. I need scarcely remark here that to persons laboring under disease, or in a delicate situation, which delicacy forbids me to name, or impaired health from nervous affections, joyous intelligence ought always to be communicated with great caution. The human constitution should be restrained from acute excitements, whether of a pleasurable or painful character. A constant serenity, supported by hope, or cheerfulness arising from a good conscience, are among the most healthful emotions of the mind.

As old age comes on the pleasurable susceptibilities become weakened, and the keenness of passion, in general, is blunted; not, however, that the aged, as some would seem to fancy, are left destitute of

enjoyment, for each period of our being has its characteristic pleasures. They have parted, it is true, with the eager sensibilties which mark the freshness of existence, but then they have gained a moral tranquillity with which earlier years are seldom blessed. The storms of youthful passions have subsided within their hearts, and if life has passed well with them, morally and physically, they now repose placidly amid the calm of its decline, looking for that joy which is promised to those who are faithful. Come and partake, ye blessed of my Father, and repose in the joys of His love forever.

FORGIVENESS.

OF the Divine attributes, that one which, in the eyes of humanity, seems to shed an especial luster around the person of Deity, is mercy. It is the promise of mercy that has brought so many wandering sinners to His feet, and called forth a depth of love, unfathomable and surpassing all human attachments. This promise constitutes a distinguishing mark between our holy religion and other creeds. It invites the moral leper, all loathsome with the scales of sin, to come and rest upon the bosom of Jesus, and be cleansed by the celestial contact. It calls back the wandering and lost ones to their happy fold, and brings them once more to their compassionate Shepherd. In a word, this gracious attribute, and the promises based upon it, open the doors of Heaven to the vile, the blasphemous, the wicked of every grade and stamp, and beseech them to enter. There is none so deeply and grossly stained with pollution that he will not be accepted; nay, the worse the dye, the more glory doth it cast about the crown of God to wash it away with the waters of forgiveness. He thunders no anathemas, He casts no reproach upon the wicked; He chides them not in wrath, nor does He mete to them according to the measure of their deserts. But He says, "Mine only and well-beloved Son have I given for you; believe on Him and live." His forgiveness knows no limit—His mercy is inexhaustible. Though we sin seventy times seven, He is ready to pardon.

> "Man may dismiss compassion from his heart,
> But God will never."

But forgiveness is not to be practised by God alone; it is enjoined upon man by Divine precept as well as by Divine example. The old law of Moses it is true, said, "An eye for an eye, and a tooth for

a tooth," but the new dispensation introduced a milder code, and a greater than Moses said, "Love your enemies, bless them that curse you, do good to them that hate you."

There is no virtue in the human heart which so adorns the life and character of an individual, nor duty more enjoined upon the Christian, than that of forgiveness. For proof of this, look at the example of Christ, who, while suffering on the cross by the hands of his enemies, exclaimed, in the anguish of his soul, "Father, forgive them, for they know not what they do." How noble the sentiment! How pure its author! And shall man, "created but a little lower than the angels," imitate the example of him in whom there was "no guile," or shall he debase himself by failing to do so? So prone are we all to stray from the path of rectitude and duty, that we find ourselves often called upon to forgive the faults and errors of those who, in an unguarded moment, do us an injury; and unless we do this, hatred and revenge will reign triumphant in every heart, and sin hold unbounded sway. But, on the other hand, if we forgive those who trespass against us, we shall, by so doing, obey the injunction of Christ, and contribute to the enjoyment of those who offend us, and advance our happiness. We should see less of the spirit of retaliation, which now reigns in our midst, and, like a destroying pestilence, spreads desolation wherever it appears. If the poisonous darts of slander are hurled to crush our hopes and darken our prospects, we should remember that "to err is human," and freely forgive the offender. It will only increase the amount of guilt by cherishing ill-will toward our fellow-men, however great the offence may be. But, oh! 'tis blessed to forgive! to "do unto others as we would they should do unto us;" thus filling the hearts of the sons of men with joy, and not grief. Let us, then, if we would render ourselves ornaments to society, and be loved by the worthy and virtuous, cherish the Christian spirit of forgiveness, and then we can not fail to be happy.

Go, search the ponderous tomes of human learning — explore the works of Confucius — examine the precepts of Seneca, and the writings of Socrates — collect all the excellencies of the ancient and modern moralists, and point to a sentence equal to the simple prayer of our Saviour, "FATHER, FORGIVE THEM!" Reviled and insulted — suffering the grossest indignities — crowned with thorns, and led away to die, no annihilating curse breaks from His lips. Sweet and placid as the aspirings of a mother for her nursling, ascends the prayer of mercy for His enemies, "*Father, forgive them.*" Oh! it was worthy of its origin, proving incontestably that His mission was from heaven!

Acquaintances, have you ever quarrelled? Friends, have you ever differed? If He, who was pure and perfect, forgave His bitterest

enemies, do you right to cherish anger? Brothers, to you the precept is imperative; you should forgive, not seven times, but "seventy times seven." Husbands and wives, you have no right to expect perfection in each other. To err is human. Illness will sometimes make you petulant, and disappointment ruffle the smoothest temper. Cultivate with care the kind and gentle affections. Plant not, but eradicate the thorn in your partner's path.

The man of revengeful spirit lives in a perpetual storm; he is his own tormentor, and his guilt, of course, becomes his punishment. Those passions which prompt him to wreak his vengeance upon his enemies, war against his own soul, and are inconsistent with his own peace. Whether he is at home or abroad, alone or in company, they still adhere to him and engross his thoughts; and Providence has ordained that whosoever meditates against the peace of another, shall, even in the design, lose his own. The thoughts of revenge break in upon his most serious and important business, embitter his most rational entertainments, and forbid him to relish any of those good things which God hath placed within his reach. Ever intent on the contrivance of mischief, or engaged in the execution, mortified with disappointments, or, his designs accomplished, tortured with reflection, he lives the life of a devil here on earth, and carries about a hell in his own breast. Whereas the meek man, who lives in constant good-will to all, who gives no man cause to be his enemy, and dares to forgive those who are so without a cause, hath a constant spring of pleasure within himself; let what will happen from without, he is sure of peace within. So far from being afraid to converse with himself, he seeks it, and meets with nothing in his own breast that does not encourage him to cherish that acquaintance. The passions which he finds there, instead of being tyrants, are servants. He knows the danger of obeying, and the impossibility of eradicating them; and while he forbids them to assume an undue influence, makes them the instruments of promoting his happiness. Happy in himself, he is free to all; he is a friend to mankind in general, and not an enemy even to those who hate him. Doth a momentary thought of revenge arise in his mind, he suppresses it, if on no other consideration, for his own sake; this he knows to be a duty as well as a pleasure. Blest with those feelings which shall not leave him at the grave, he imitates the Deity in benevolence, and obtains, as far as mortals can obtain, the happiness of the Deity in return.

Banish all malignant and revengeful thoughts. A spirit of revenge is the very spirit of the devil; than which nothing makes a man more like him, and nothing can be more opposite to the temper which Christianity was designed to promote. If your revenge be not satis-

fied, it will give you torment now; if it be, it will give you greater hereafter. No one is a greater self-tormentor than an injudicious and revengeful man. Let him whose soul is dark with malice and revenge, walk through the fields clad with verdure and adorned with flowers; to his eye there is no beauty — the flowers to him exhale no fragrance. Like his soul, nature is robed in the deepest sable. The smile of beauty and cheerfulness lights not up his bosom with joy; but the furies of hell rage there, and render him as miserable as he wishes the object of his hate. But let him lay his hand upon his breast, and say, "Revenge, I cast thee from me; Father, forgive me as I forgive others," and nature assumes a new and delightful garniture. Then, indeed, are the meads verdant and the flowers fragrant — then is the music of the grove delightful to the ear, and the smile of virtue lovely to the soul. Then will he enjoy the unspeakable happiness of obeying the precept, and imitating the example of our blessed Redeemer, who closed his mission on earth with that beautiful prayer, "Father, forgive them; for they know not what they do!"

How beautiful it is to see how God blesses the operation of his great moral law, "Love thy neighbor," and we should oftener see it, could we look into the hidden paths of life and find that it is not self-interest, riches, or fame that binds heart to heart. The bestowment of a friendly act can rob wealth of its strength, extract the bitter from the cup of sorrow, and open wells of gladness in desolate homes. We do not always see the golden links shining in the chain of human events; but they are there, and he is happy who feels their gentle but irresistible influence.

AVARICE.

THE pleasure of avarice consists in accumulating and hoarding up treasures; in computing and gloating over them; in feeling the power which they bestow, and in the consciousness of possessing the means, though there be no disposition to employ them for the purposes of enjoyment; and finally, it may be presumed, in anticipating the future gratifications they are to purchase, since even in the most inveterate miser there is probably a sort of vague looking forward to the time when his superfluous stores will be brought into use to administer, in some way, to the indulgence of his wants, and the consequent promotion of his happiness, although such a period rarely, if ever, arrives.

The painful feelings mingled in avarice are gloomy apprehensions for the safety of its treasures, with uneasy forebodings of exaggerated

ills which would result from their privation. Hence fear, suspicion, and anxiety serve to counterbalance the pleasure arising from the contemplation and consciousness of possessing the idol. And, then, there is the unhappiness accompanying every little expenditure, even for the common necessities of life—the pain, oftentimes distressing, of parting with even a fraction of that wealth to which the soul is so indissolubly bound.

There are passions whose consequences to the individual and to society are vastly more pernicious, but few are there more despicable, more debasing, more destructive of every sentiment which refines and elevates our nature than avarice. Nothing noble, nothing honorable can ever associate with the sordid slave of this unworthy feeling. It chills and degrades the spirit, freezes every generous affection, breaks every social relation, every tie of friendship and kindred, and renders the heart as callous to every sympathetic appeal as the inanimate mass it worships. Gold is its friend, its mistress, its god.

In respect to the physical system, avarice lessens the healthful vigor of the heart, and reduces the energy of all the important functions of the economy. Under its noxious influence the cheek turns pale, the skin becomes prematurely wrinkled, and the whole frame appears to contract, to meet, as it were, the littleness of its penurious soul. Nothing, in short, is expanded either in mind or body in the covetous man, but he seems to be constantly receding from all about him, and shrinking within the compass of his own mean and narrow spirit. He denies himself not merely the pleasures, but the ordinary comforts of life; turns away from the bounties which nature has spread around him, and even starves himself in the midst of plenty, that he may feast his imagination on his useless hoards. The extent to which this sordid passion has in some instances reached, would appear almost incredible.

Avarice does not, like most other passions, diminish with the advance of life, but, on the contrary, seems disposed to acquire more and more strength in proportion as that term draws near when wealth can be of no more account than the dust to which the withered body is about to return. Old age and covetousness have become proverbially associated. Not unfrequently will this sordid inclination remain active even to the end, outliving every other feeling that can cheer the languid eye or raise the palsied touch. Thus we have examples of misers who died in the dark to save the cost of a candle. Fielding tells us of a miser who comforted himself on his death-bed "by making a crafty and advantageous bargain concerning his funeral, with an undertaker who had married his only child." I well remember an old man, who—having reached the extremity of his existence, lying in a

state of torpor, and apathy to all around him — would always be aroused, and a gleam of interest light up his dim eye, by the jingling of money. Even the sudden and most appalling aspect of death will not always banish this base sentiment from the heart. In shipwrecks, persons have so overloaded themselves with gold as to sink at once under its heavy pressure. In excavating Pompeii, a skeleton was found with its bony fingers firmly clutched round a parcel of money.

"When," says Dr. Brown, speaking of the miser, "the relations, or other expectant heirs, gather around his couch, not to comfort, nor even to seem to comfort, but to await, in decent mimicry of solemn attendance, that moment which they rejoice to see approaching, the dying eye can still send a jealous glance to the *coffer*, near which it trembles to see, though dimly, so many human forms assembled, and that feeling of jealous agony which follows and outlasts the obscure vision of floating forms that are scarcely remembered, is at once the last misery and the last consciousness of life."

Although avarice can scarcely be set down as a very prolific source of disease, still, the painful feelings mingling with it, when extravagant, exercise a more or less morbid and depressing influence on the energies of life. The countenance of the miser is almost uniformly pale and contracted, his body spare, and his temper prone to be gloomy, irritable, and suspicious — conditions rarely accompanying a perfect and healthful action of the different bodily functions. He is, moreover, especially as age advances, apt to fall into that diseased and painful state of mind in which the imagination is continually haunted by the distressing apprehension of future penury and want. This is a strange monomania, inasmuch as its victims have means in abundance to secure them against the remotest prospects of such danger; and when, in the ordinary course of nature, wealth must soon become valueless.

CHARITY.

"Nay, thank me not!" the kind one said,
"'T is to myself I' ve given!
Each friendly deed like this, I make
A stepping-stone to Heaven."

THE Christian, the philanthropist, and those who may be favored with a bounteous store of the goods of this earth, should exercise charity toward their fellow-men suffering from the effects of want

and poverty. If people knew the degree of good they could accomplish, by a little personal attention and relief to the poor, and by an occasional visit to their sick beds, we are sure no selfish or falsely sensitive feelings would deter them from the performance of such benevolent and truly Christian acts.

Christians should remember the poor; the thoughts of their wants and sufferings should lead them to the observance of benevolent duties enjoined upon them by the Saviour they profess to serve and worship, and by the religion they profess to practice. Let not the religion you have embraced become a by-word, nor your sincerity and honesty be questioned, through refusal or neglect to exercise those acts of kindness which make the heart of the sufferer leap for joy, and the desolate home brighten with the abundance of succor. Now is the time for the Christian to show by his words that he is not merely a professor, but an exemplar of the doctrines inculcated by the Saviour; for the philanthropist to extend his works of love to suffering humanity; for the rich to show their gratitude to the "Giver of all gifts," for their continued prosperity and bounteous earthly store, by extending the helping hand to their less fortunate and less prosperous neighbors.

Were you fortunate in inheriting a large property, or have you been prosperous in speculation, or in trade? In brief, do you possess houses, lands, stocks, and are you in receipt of an income, far more than adequate, not only to supply you with the necessaries and comforts, but with the luxuries of life? If the answer to all these questions be in the affirmative, Providence has clothed you with power to assist and relieve many of the poor and meritorious of your fellow-creatures. This may be done, too, without any injury to yourself, without curtailing your comforts, without impairing your health, without shortening your life. On the contrary, your mind will be soothed, your heart gladdened, and your whole nature improved by acts of benevolence; while those you have relieved will offer up prayers for your welfare in this world, and in the world to come. You will feel a nameless, an indescribable satisfaction in the discharge of such duties as we have referred to. You will feel elevated in your estimation; your reflections will be calmer and sweeter, and even when wrapped in the arms of sleep your slumber will be deeper and more refreshing. The future, too, will catch a ray of light as from heaven; the Christian virtues will be felt and enjoyed by you, and kindling under the hallowed influences of that blessed spirit, Charity, you will, every hour of your life, rejoice when you awake to a true sense of your duty as a sentient, conscious, responsible, and accountable being. You might comfort and instruct thousands, whom, in the midst of

squalid misery, ignorance, and crime, you had sought to have reverence and love religion.

There are large numbers of sincere Christians in this world who, comparatively poor, yet manifest their principles by going about doing good. They are "the salt of the earth," and without the purifying influence of such, what would be the fate of the poor? Then be kind to the unfortunate, dry the mourner's tears, that memory may have a store of sweet thoughts to live upon when the reality shall no longer stand before us. The everlasting hills will crumble to dust, but a good act will never be forgotten. The earth will grow old and perish, but a charitable act will be ever green and flourish throughout eternity. The moon and stars will grow dim, and the sun roll from the heavens, but the spirit of the truly charitable man or woman will grow brighter and brighter, while God himself shall live.

The king of Persia, conversing with two philosophers and his vizier, asked, "What situation of man is most to be deplored?" One of the philosophers replied, that "it was old age, accompanied with poverty;" the other, that "it was to have the body oppressed with infirmities, the mind worn out, and the heart broken by a series of disappointments." The vizier, however, replied that he knew a condition far more to be pitied. "It is that," said he, "of him who has passed through life without doing good, and who, unexpectedly surprised by death, is sent to appear before the bar of the Sovereign Judge of all."

Charity is placed at the head of all the Christian virtues by St. Paul. It is the foundation of all the Christian graces; without it, religion is like a body without a soul; our friendship a mere shadow; our alms the offerings of pride and hypocrisy.

Was this Heaven-born, soul-cheering principle, the main spring of human action, the all-pervading motive power that impelled mankind in their onward course to eternity, the polar star to guide them through this world of sin and woe, the trials and sorrows of life would be softened in its melting sunbeams, a new and blissful era would dawn auspiciously upon our race, and pure and undefiled religion would then be honored and glorified. Wars would cease; envy, jealousy, and revenge would hide their diminished heads; slander and persecution would be unknown; sectarian walls, in matters of religion, would crumble in the dust; the household of faith would become, what it should be, a united, harmonious family in Christ; infidelity, vice, and immorality would recede, and happiness, before unknown, would become the crowning glory of man; Christianity would stand forth, divested of the inventions of men, in all the majesty of its loveliness. The victories of the Cross would be rapidly achieved, and

the bright day be ushered in when our blessed Saviour shall rule as king of nations, as he now does king of saints.

Benevolence is a part of religion; it falls, like the dew from heaven on the drooping flowers, in the stillness of night. Its refreshing and reviving effects are felt, seen, and admired. It flows from a good heart, and looks beyond the skies for approval and reward. It is one of the attributes of Deity, the moving cause of every blessing we enjoy.

Religion begins with a change of heart. The greater part of life is usually occupied with the acquisition and use of property. A change of heart, if real, can not leave this principal part of life unaffected. Its subject must be expected to show that he has found a more valued treasure in Heaven by his new aims in getting, and his new principles in using the treasures of this world. If, in that chief part of life occupied with accumulating and using property, the professed subject of a change consisted in placing the affections on things above, continue to show the same estimate of property as the great end to be sought, the same eagerness in getting, the same tenacity in holding, the same self-seeking or exclusively selfish gratification in using it, need it be surprising that his worldly competitors doubt the reality of the change? Must not Christ repel such professors with his own searching question, "What do ye more than others?" There is nothing less than absurdity in the idea of a change, in which the man becomes a new creature in Christ, in which old things are passed away and all things are become new, which yet does not carry a new spirit through the business, and consecrate the property as well as the heart to God — in which the *theory* is all for the glory of God, the *practice* all for making money.

Religion is love. Now, love is an active principle. It is as natural for love to act beneficently, as for a fountain to flow, or a star to shine; and its action is ungrudging, unstinted, delighting in toil for the loved object. Witness, for instance, the toils of parental love. Can love to God and man be the very essence of the character, while beneficent efforts are left to hazard, crowded into the by-corners of life, supplied by chippings and remnants? *Can* love control the *heart*, when at the same time it obviously does not control the *actions* of the life?

Christians are laborers together with God. God is always giving, always employed in the work of beneficence; if we labor with him, then we must labor in the work of love and of beneficence. Can any one, then, be a laborer with God, and make that secondary which he regards as primary; pursue without plan, energy, or steadfastness, the object which he seeks with a steadfastness which knows no abatement, a zeal which spares no sacrifice, and an outpouring of treasure

which can not be calculated? Let the great fact possess your soul with the fullness which its reality demands, that you are privileged to be a laborer with God, and that God is unceasingly engaged in the work of beneficence, and you will cease to make selfish gratifications the exclusive object of your pursuit, and instead of beneficence being an occasional accident or appendage to business, it will become a steady aim, and be pursued mainly from love of usefulness — of being like God, and engaged in the same work.

The benevolent man is the *truly* happy man. He that seeks to *get good* from men — to make them subservient to his happiness — is miserable, in comparison with him who aims to *do good* to others. God loves and blesses those whose disposition and conduct resemble His own. And as the mind becomes more generous, more pure, more active in doing good, all the sources of felicity will multiply around it; it will have peace and dignity within, and the smiles of infinite complacency will beam upon it with inexpressible glory.

ADVERSITY.

"Daughter of Heaven's relentless power;
Thou tamer of the human breast,
Whose iron scourge and torturing hour
The bad affright, afflict the best;
Bound in thy adamantine chain,
The proud are taught to taste of pain;
And purple tyrants vainly groan,
With pangs unfelt before, unpitied, and alone."

AT a superficial view, it appears that adversity happens to all alike. Without regard to rank or condition, the good are apparently as little favored by fortune as the bad, the high as the humble. People are continually rising and falling in all the grades of society. We often see men of high expectations suddenly cast down from their lofty aspirations, and left to struggle with despair and ruin. A man's fortune depends upon such an uncertain basis; there are so many causes by which it may be lost, that we can not be sure of retaining, for any length of time, what we now possess. If the happiness of mankind depended upon the caprices of fortune, their condition would be bad indeed. But it is possible to possess a mind which will not lose its tranquillity in the severest adversity, or at least such a one as, being disturbed and deprived of its wonted serenity by a sudden calamity, will recover in a short period, and assume its native buoyancy, unimpaired by the shock which it has experienced. A mind that is pos

sessed of warm sympathies and open to the pleasures of life, which at the same time is incapable of being injured by adversity; or, in other words, a mind that is capable of enjoying the blessings of wealth and favor, or of being happy without them, is undoubtedly possessed of the highest attainable virtue — a virtue which can only be attained by such as look "beyond this visible diurnal sphere," and fix their steadfast eye upon that Eternal Being who dispenses virtue and mercy, as the luminary of day dispenses light and heat throughout all the regions of this boundless universe.

Goldsmith has drawn a character in his *Vicar of Wakefield*, which is truly inimitable. Most people imagine that a man possessed of the virtues which have been celebrated so much in story, must appear, in all his actions, in his carriage and aspects, entirely superior to common men; they picture him to their imaginations as a being not made like themselves, but after a better fashion. There could never be a greater mistake. The greatest men often appear like the humblest. In the *Vicar of Wakefield*, Goldsmith has drawn a true character of a genuine Christian; he was deprived of almost everything that was dear to him, but his mind, however distressed for a time, finally assumed its native serenity, and proved itself superior to every calamity.

I have seen many and varied scenes — some of joy, of sorrow, of care and quiet; but never have my feelings been so intensely affected as at the house of a friend, who had invited some poor little orphan children to dine with him. I sat next to a little girl. "I know," said she, addressing me, "why Mr. —— has invited us to his house; it is because we have n't any friends. I have not seen a friend in five years!" Merciful heaven! Only twelve years old, and has not seen the face of a friend for five long years! We have heard many a sad tale of orphanage, and thought we felt sympathy for the friendless before, but we never heard words that went so directly to the heart; that made so palpable the dreariness of the long days and nights that heavily follow one another, unenlivened by a single smile, or kindly tone of one living being with whom the homeless can claim kindred. We thought, too, that we knew of old something of the value of our friends, and estimated, not altogether too lightly, their joyous and assuaging influence upon the soul; but never before did our relatives seem so precious to our regard, or did our heart involuntarily seek to bind them to itself with such a tenacious embrace, as since the simple words of the poor orphan girl have given to us one slight and inadequate impression of her unutterable and melancholy experience. This fair and gentle child is dead, her hours of solitude are at an end, her pure spirit has met with friends with golden harps, who have taken

her by the hand and led her through the heavenly gates, and beside the still waters, to where a sweet, loving voice said, "Suffer little children to come unto me, and forbid them not, for of such is the Kingdom of Heaven."

No wonder that God, from His secret throne, has sent out so many kindly messages and sacred promises of love to the solitary and forsaken, the parentless and the widow; for, oh! how much do they need the sympathy of Heaven, who have no friends on earth? And how pleasant to the angels of consolation to pay their unobtrusive and peaceful visits to the children of loneliness and sorrow! Would it not repay us richly, aye, a thousand fold, if we would open our doors more frequently to those who have no homes, and distribute our kindly sympathies—which are, indeed, the bread of life—more freely to those who hunger and thirst for words of friendship and looks of affection and tenderness? Each heart requires sympathy, for it is like dew to the flowers,—without it woe would be desperation, and our joy but feeble and fleeting. Every one who has felt the influence of a sympathizing friend, one whose eyes sparkle as we speak of our success, or whose face is sorrowful when ours is sad, will bear testimony to the truth of it. Are we rich? Our wealth is a sacred trust for us to deal out to humanity. Are we rich in grace? It is a heavenly treasure of kind thoughts and sentiments wherewith to bind up the broken-hearted! Are we rich in wisdom and knowledge? It is an inexhaustible supply of precious jewels confided to us to scatter along the road-side of life. Do we chance to be superior in any one moral quality? Then do our poor fellow-mortals possess much greater claim upon our good example, our constant patience and forbearance, or our kindness, our interest, and our love. How can we possibly expect God to bless us, if we neglect the poor! No kind friend to speak a word of consolation to them; if they have trials and misfortunes, they must bear them in silence. How much genius, virtue, and modesty, shrink away in some obscure and lonely hovel, while vicious monsters and hypocrites hide themselves so easily in silken robes! To do good we must mingle with society, in order to give and receive instruction; to aid and comfort one another; to seek out the poor, the widow, and the orphan, and to promote and advance not only their earthly but their spiritual comfort, and by love and sympathy soothe their wounded spirits, instead of hiding our light under a bushel.

"Go abroad in some great city, in the night; before you brightly shine the lights in that stately mansion, where pleasure has gathered her votaries. The dance, the song are there; and gay voices, and exultant hearts, and fair features, that grow fairer in the excitement, 'and all goes merry as the marriage bell.'" And most natural and

fitting is it that the hearts of the young should glow with fervid pleasure in the whirling and dazzling scene. But here is only a part of the scene; at this very moment, within sight of the brilliant windows, within the sound of the rejoicing music, a widowed mother sits in her dreary room, and to her frame consumption has brought its feebleness, and to her cheek its flush, and to her eye its unnatural light. Her children sleep around, and one, that ever stirs with the low moanings of disease, slumbers fitfully in the cradle at her feet. Her debilitated frame craves rest; yet by the light of a solitary lamp, she still plies her needle, that her children may have bread on the morrow. While she labors through the lonely hours, her sinking frame admonishes her that this resource soon must fail, and she be called away to leave them alone. And while her heart swells with anguish, the sound of rejoicing comes on the wind to her silent chamber. Not one of all that gay circle whose eyes will not close before hers this night! One by one the wheels that bear them to their homes depart; the sounds of mirth and pleasure grow silent in the midnight hours; the lights of the brilliant mansion are extinguished; but still from her chamber shines her solitary lamp. The dying mother must toil and watch! With the morning, and brighter than its footsteps upon the mountains, behold one of that gay throng, in the bloom of youth, leaving her home—she has entered the narrow lane and opened the door of that obscure chamber. She has gone to sit with this poor widow; to carry her needed aid; to watch over her sick child, and to whisper to her the sweet words of human sympathy. Blessed is she who can thus forget herself, and find enjoyment in carrying the happiness to those who sit unfriended and alone. The heart of the lonely mother is warmed by her coming—for blessed to the desolate is the fresh sympathy of the young and happy. She is no longer alone; they have a common hope; they can bend together before the same Father; they read the same Gospel; they visit the cross together, and together watch at the tomb on the morning of the resurrection. When she is again left in her lonely chamber, she is not alone. As her visitor retires, grateful thoughts of human sympathies linger behind, like sunset in the air. The sense of God's kind providence rests on her soul. To her faith the distant are brought near, and the dead live—await her coming to a better land. Her mind goes forward to the future; she rises above the clouds. Serenely shines the sun, gently falls the love of God upon her heart. Sitting amid trials and darkness, and the ruin of earthly prospects, with calm spirit she builds her hope in Heaven. The prosperity, the adverse fortunes, the joy, the grief, all this might be seen in every age. It is Christianity that has brought sympathy to the suffering, hope to the bereaved, and

resignation to the afflicted; which has brought light to dark hours, and faith in Heaven to those that dwell amid the sorrows of earth. It is Christianity that softens and melts the ice of prosperity; which has smitten the rock, and made it a fountain of living waters to those who dwell in the valleys below.

KINDNESS.

KINDNESS will go farther, and yield more happiness in this world, than all the haughtiness and asperity we can possibly assume. How much easier, too, is it to act kindly and naturally to our fellow-men, and even to the domestic, useful, and faithful animals about us, than to affect a rude and boisterous demeanor, which is sure not only to make others despise us, but, on reflection, to cause us to despise ourselves! A kind, sympathizing word from the lips, falls like oil upon the ruffled waters of the human breast. And this is the great secret in the success of business — why some are successful, and others unfortunate. An indelible motto should be impressed on the mind of every sensible man, who would wish to pass through life successfully — that honey catches flies, but vinegar never. Nothing is more valuable, that is so easily purchased, than good nature. A man with a pleasant disposition finds friends every where, and makes friends where people of a contrary nature see only enemies. Good nature is one of the sweetest gifts of Providence; like the pure sunshine, it gladdens, enlivens, and cheers in the midst of anger and revenge. It is good nature that elevates, purifies, and exalts; but the reverse that degrades, debases, and destroys. Who will not strive to possess this glorious trait of character? The heart is easily overcome by acts of kindness. A kind word may fall like drops of rain upon the drooping flowers. Every kind act you bestow will have its influence, and eternity will reveal it. The kind charity bestowed upon the poor beggar; the tear you have wiped away; the glass of cold water you have lifted to the parched lips, have had their effect. You will remember them in the hours of affliction and death. However small, they have helped to swell the broad river of mercy and goodness, that will eventually so fertilize the moral world that it will become the garden of the Lord.

Have we a son or a daughter whose juvenile indiscretion, or thoughtlessness, has awakened our care? Be cautious; harshness and tyranny will almost invariably add fuel to the flame of perverseness, while a gentle word of affectionate reproof, like the pliant rod of Moses with

the flinty rock in the desert, will soon bring the waters of repentance. Even to those around us, however menial be their capacity, it is not only our duty, but our interest, to show forbearance and kindness of demeanor; for which of us, if placed in their situation, would look more closely to the interest of our employer, if constantly reminded of our degradation, by his or her arrogance, or rewarded for every generous and faithful duty with a cold word, or a thankless look? I am convinced that there never yet was an instance, in which kindness has been fairly exercised, but that it has subdued the enmity opposed to it. The first effort may not succeed, but let it repeatedly shed the dew of its holy influence upon the revengeful soul, and it will soon become beautiful with every flower of tenderness. Let any person put the question to himself, whether, under any circumstances, he can deliberately resist continued kindness, and the voice of affection will answer, "That good is omnipotent in overcoming evil."

If the angry and revengeful person would only govern his passions, and light the lamp of affection in his heart, that it might stream out in his features and actions, he would soon discover a wide difference in his communion with the world. A kind word, an obliging action, even if it be a trifling one, has a power superior to the harp of David in calming the billows of the soul.

Every great and noble feeling which we exercise, every good action which we perform, is a round in the ladder which leads to God. How delightful it is to scatter the blessings of benevolence over the habitation of distress; to raise the drooping head of pining worth; to minister to the poor widow and friendless orphan; to promote the industry of the poor; to bestow rewards on the children of labor, and to search into the cause of sorrow and distress! Men think very little of the value of a bow, or a smile, or friendly salutation, yet how small the cost, how often great the return! By a few soft words, and pleasant looks, enemies have been made friends, and old attachments renewed that had been annulled for years. A smile — it beams upon the lover's heart like a ray of sunshine in the depths of the forest. A nod, a kind look — it has gained more friends than wealth and learning put together. A grasp of the hand — it is more potent in cementing the ties of affection than all feelings of self-interest. Be kind, for memory is an angel that comes in the holy night-time, and, folding its wings beside us, silently whispers in our ears our faults or our virtues, and either disturbs or soothes our spirit's repose. He who will turn away a friend for one fault, is a stranger to the best feelings of the human heart. Who has not erred at least once in his life? If that fault were not overlooked, to what depths of infamy would not thousands have descended? We know not the peculiar and pressing temptations to

which another may be exposed. He may have fought manfully for months against the sin, and still kept the secret locked in his bosom. At last he was overcome; he would give worlds to recall the act; he has mourned over it in secret, and repented in dust and ashes. Shall we forsake him? Earth and heaven, justice, humanity, philanthropy, and religion, cry out, "Forgive him!" He who will not forgive, must possess the heart of a demon — surely the love of God is not in him.

"Some years ago," says the Rev. William Jay, "I had in my garden a tree that never bore. One day I was going down with the axe in my hand to fell it; my wife met me in the pathway and pleaded for it, saying, 'Why, the spring is now very near; stay, and see whether there may not be some change; and if not, you can deal with it accordingly.' As I had never repented following her advice, I yielded to it now; and what was the consequence? In a few weeks the tree was covered with blossoms, and in a few weeks more it was bending with fruit. Ah! said I, this should teach me; I have learned a lesson not to cut down too soon; that is, not to consider my object incorrigible, or abandon it too hastily, so as to give up hope, and the use of means and prayer in their behalf."

"Then said he unto the dresser of the vineyard: Behold, these three years I come seeking fruit on this fig-tree, and find none; cut it down, why cumbereth it the ground? And he answering said unto him: 'Lord, let it alone this year also, and if it bear fruit, well; and if not, then after that thou shalt cut it down.'"

Let not the hope of worldly recompense prompt thee to good actions. Be content with the approval of Heaven and of thine own soul. The human heart rises against oppression, and is soothed by gentleness, as the waves of the ocean rise in proportion to the violence of the winds, and sink with the breeze into mildness and serenity.

CONCLUSION OF THE PASSIONS.

I HAVE now done with the passions, and have shown you that pure and well-regulated moral affections are essential to the whole animal economy; that the turbulent and evil passions must necessarily corrupt the health, the sources of our physical, moral, and intellectual health, and thus be followed by heavy penalties, and suffering to the general constitution. Even our physical interests, separate from any other motive, demand the cultivation of the good and the restraint of the evil passions of our nature.

If you desire to preserve your health, you must previously learn to conquer your passions and keep them in absolute subjection to reason; for let a man be ever so temperate in his diet and regular in his exercise, yet still some unhappy passion, if indulged in to excess, will prevail over all his regularity, and prevent the good effects of his temperance. It is necessary, therefore, that he should be at all times upon his guard against an influence so destructive.

There is a close connection between a virtuous regulation of the moral feelings, and the health of the body. Virtue is the best preservative of health, as it prescribes temperance, and such a regulation of our passions as is most conducive to the well-being of the animal economy; so that it is, at the same time, the only true happiness of the mind, and the best means of preserving the health of the body. Without a prudent government of the affections you can not enjoy health. Then let me urge upon you that the mind should be early trained up in virtuous habits, particularly in modesty and obedience, as the most summary method of insuring the health of the body in future life.

Then how essential and important to commence early the moral education of children. Every day that this is neglected will the baneful feelings of their nature be acquiring additional force and obstinacy. It is in the very germ, in the weakness of their birth, that these are to be successfully combated. As I have before told you, children derive from their parents peculiar traits of character, and therefore require moral discipline, at an age by far earlier than is usually imagined. That many children suffer in their health, and many times to no slight extent, under the repeated and severe operations of passion, which parents have neglected to reprove, is a truth too plain for contradiction. And not only have they to undergo present suffering from such unpardonable remissness, but not unfrequently does it become the cause of an afflictive train of infirmities both of mind and body in their future years; and experience, it may be of the most painful nature, must

teach them to bring under control feelings which should have been repressed in the commencement of their growth. We frequently see parents, by humoring them when little, corrupt the principles of nature in their children, and wonder afterward to taste the bitter waters, when they themselves have poisoned the fountain.

No duties or obligations have been more often eloquently enforced by the moralist and divine, than those of the child to the parent; and I would not say aught that might serve in any degree to weaken their deep and binding character. Still, it appears to me, that those due from the parent to the child, are really of a paramount nature, and that most serious consequences will be hazarded by their oversight. Parents bestow existence upon their children, and are, therefore, by every law of nature, human and divine, bound in the most solemn duty to spare no sacrifice, to omit no effort, which may contribute to render that existence a blessing. If, through their culpable neglect and mismanagement, they entail upon them a host of mental and bodily ills, how can they expect any consolation and happiness, or gratitude, for a life which they have burdened with afflictions, and been instrumental by their neglect in desolating.

When we consider the carelessness and misjudgment so often exhib ited in the early training of the young, how many children are literally educated by example, if not by precept, to falsehood, hypocrisy, pusillanimity, and intemperance, in its broadest sense; in short, how many moral and physical vices are allowed to engraft themselves in the constitution, even in the dawn of its development; we are led almost to wonder that human nature does not grow up even more corrupt than we actually find it.

In my concluding remarks on so important a subject, I would again, and for the last time, urge the high importance, to the whole living economy, at all periods of our existence, of a prudent government of the moral constitution. Man unrestrained by discipline, or abandoned to the turbulence of unbridled passion, is pitiable and degraded indeed. The fountains of his health and enjoyment are corrupted, and all that is comely and elevated in his nature marred and debased. His whole life becomes but a succession of painful mental and physical strugglings and commotions; a torment equally to himself and all around him.

But although the passions, given to us for wise and beneficent purposes, are so prolific of evil, and so frequently a fruitful source of disease and sorrow, yet Providence in great wisdom has given to us power to control them, and by education and a proper restraint and due culture of all the benevolent feelings of our nature, they may be rendered our richest blessings to soothe the pains and disappoint-

ments of life, while the gladdening beams of hope may penetrate even the darkest night of the soul, and point out to us the joys of another and a brighter world.

INTEMPERANCE.

INTEMPERANCE not only destroys the health, but inflicts ruin upon the innocent and helpless, for it invades the family and social circle, and spreads woe and sorrow all around; it cuts down youth in all its vigor, manhood in its strength, and age in its weakness; it breaks the father's heart, bereaves the doting mother, extinguishes natural affection, erases conjugal love, blots out filial attachment, blights parental hope, and brings down mourning age in sorrow to the grave. It produces weakness not strength, sickness not health, death not life. It makes wives widows, children orphans, fathers friendless, and all of them at last beggars.

It produces fevers, feeds rheumatism, nurses the gout, welcomes epidemics, invites disease; imparts pestilence, embraces consumption, cherishes dyspepsia, and encourages apoplexy and paralytic affections. It covers the land with idleness and poverty, disease and crime; it fills our jails, supplies our alms-houses, and furnishes subjects for our asylums; it engenders controversies, fosters quarrels, and cherishes riots; it condemns law, spurns order; it crowds the penitentiaries, and furnishes the victims for the scaffold; it is the life blood of the gambler, the food of the counterfeiter, the prop of the highwayman, and the support of the midnight incendiary and assassin, the friend and companion of the brothel. It countenances the liar, respects the thief, and esteems the blasphemer; it violates obligations, reverences fraud, and honors infamy; it defames benevolence, hates love, scorns virtue, and slanders innocence; it incites the father to butcher his innocent children, helps the husband to kill his wife, and aids the child to grind the parricidal axe.

It burns man, consumes woman, detests life, curses God, and despises heaven; it suborns witnesses, nurses perjury, defiles the jury-box, and stains the judicial ermine; it bribes votes, corrupts elections, poisons our institutions, and endangers our government; it degrades the citizen, degrades the legislature, and dishonors the statesman. It brings shame not honor, terror not safety, despair not hope, misery not happiness; and now, as with the malevolence of a fiend, it calmly surveys its frightful desolation, and insatiate with havoc, it poisons felicity, kills peace, ruins morals, blights confidence, slays reputation, and

wipes out national honor; then curses the world, and laughs at the ruin it has inflicted upon the human race.

I knew a youth, a noble, generous youth, from whose heart flowed a living fount of pure and holy feeling, which spread around and fertilized the soil of friendship, and warm and generous hearts crowded about and enclosed him in a circle of pure and god-like happiness. The eye of woman brightened at his approach, and wealth and honor smiled to woo him to their circle. His days sped onward, and as a summer's brook sparkles all joyous on its gladsome way, so sped he on, blithesome amid the light of woman's love, and manhood's eulogy. He wooed and won a maid of peerless charms; a being fair, delicate, and pure bestowed the harvest of her heart's young love upon him. The car of time rolled on, and clouds arose to dim the horizon of his worldly happiness. The serpent of inebriation crept into the Eden of his heart; the pure and holy feelings which the God of nature had implanted in his soul became polluted by the influence of the miscalled social cup. The warm and generous aspirations of his soul became frozen and callous within him. The tears of the wretched, the agony of the afflicted wife, found no response within his bosom. The pure and holy fount of universal love within his heart, that once gushed forth at the moanings of misery, and prompted the hand to administer unto the requirements of the wretched, sent forth no more its pure and benevolent offerings; its waters had become intermingled with the poisoned ingredients of spirits, and the rank weeds of intemperance had sprung up and choked the fount from whence the stream flowed. The dark spirit of poverty had flapped its wings over his habitation, and the burning hand of disease had seared the brightness of his eye, and palsied the elasticity of his frame. The friends who basked in the sunshine of his prosperity, fled when the wintry winds of adversity blew harshly around his dwelling.

Pause, gentle reader! Go to yon lowly burial place, and ask who rests beneath its lowly surface. "The moldering remains of a drunkard." One who possessed a heart overflowing with the milk of human kindness, the days of whose boyhood were hallowed by high and noble aspirations; the hours of whose early manhood were unstained by care and crime; the setting orb of whose destiny was enshrouded in a mist of misery and degradation. He saw the smile of joy sparkling in the social glass; he noted not the demon of destruction lurking at the bottom of the goblet; with eager hand he raised the poisoned glass to his lips and he was ruined.

It is liquor that mars the whole consistency and blights the noblest energies of the soul, it wrecks and withers forever the happiness of the domestic fireside, it clogs and dampens all the generous and

affectionate avenues of the heart, it makes man a drone in the busy hive of society, an encumbrance to himself, and a source of unhappiness to all around him, it deprives him of his natural energies, and makes him disregardful of the wants of the innocent beings who are nearest to him and dependent upon him, it transforms gifted man (fashioned in the express image of his maker,) into a brute, and causes him to forfeit the affections and break the heart of the innocent and confiding being whom God has made inseparable with himself, and who should look up to him for comfort, protection, and support; it causes him contemptuously to disregard the kind admonitions of a merciful Savior. Liquor!. Oh, how many earthly Edens hast thou made desolate! How many starved and naked orphans hast thou cast upon the cold charities of an unfriendly world! How many graves hast thou filled with confiding and broken-hearted wives? What sad wrecks hast thou made of brilliant talents and splendid geniuses? Would to God there was one universal temperance society, and all mankind were members of it; the glorious cause of Christ would be advanced, and myriads of bare-footed orphans and broken-hearted wives would chant praises to Heaven for the success of the temperance cause; the lost would be reclaimed and bleeding hearts healed! Oh thou mighty transformer of intellectual and generous hearted man into all that is despicable! The effect, which the habit of drunkenness produces in offspring, is one which, on account of false delicacy and ignorance, has seldom been presented before society with that clearness, and in fact truth, which the nature of the case demands. Science and general intelligence, at the present time, has greatly changed the public taste; and these topics, which, twenty years ago, could only be found investigated in medical works, and occasionally hinted at in public prints, are now wisely and decorously listened to with profound interest and attention, by large, refined, and respectable audiences.

In presenting the subject, we are led by motives of benevolence, to not only individuals and families, but humanity itself. It is now found, that to benefit mankind, we must commence at the foundation, the root and origin of the evil, and that to obviate any particular evil, the best way is to inform the reason, and address the judgment, and thus force conviction on the understanding and the heart. The deleterious effects of drunkenness is demonstrated from fact.

In regard to posterity, a knowledge of constitutional deformity in the child, in consequence of the intoxication and intemperate habits of the parent, should convince us that the use of spirituous liquors, must be highly injurious to the race, in producing effects destructive to health, intelligence, and long life. They accelerate and pollute all

the fluids in the system, and by that reaction which is sure to follow, leave even the muscles and bones themselves affected with disease. In a few years we see the whole man changed. His erect and manly form has assumed a swinish and beastly bearing, and so great is the change, that the most familiar friend who has been absent, on being brought suddenly into his presence, scarcely knows him. Now, should we not reasonably suppose that that which affects the whole man or woman, must proportionably affect embryonic existence! That the drunken fathers or mothers must become the authors of a misformed progeny? That there must be a radical derangement in the functions of the brain, and nerves themselves? Most assuredly; and to this cause alone is to be attributed, in some considerable degree, the more irritable nerves and shorter life of the present race. Now let us turn to facts which came under our own observation. We recollect one child, a boy of ten years, who always had the drawling aspect of a man two-thirds drunk, the saliva ever, when he was awake, except when eating or drinking, running from the corners of his mouth. The mother said she was frightened at the appearance of a drunken brother, as the spittle was thus drawling from him. We saw another who was always reeling, staggering, and pitching, when he walked, the same as a drunken man, with the same idiotic expression. The mother said it was in consequence of cohabiting with a drunken husband. Frequently have we seen faces stained with cherry brandy, or with claret wine, from the effect of natural sympathy on the embryo.

Now, with these facts before us, what a hazard does that female run who becomes associated with a drunken husband, of having her children, if not objects of disgust and deformity, yet on account of seminal pollution, an irritable, brainless race, of low feelings and propensities, and, therefore, objects of pitiable compassion and forbearance.

Is the authority of such men as Gall, Caldwell, and Burton to be despised? Are the teachings of common sense not to be regarded? Are these matters of fact, observations, and our experience to be condemned? We pity the beautiful and fascinating girl, the noble and refined lady, who has to become associated with a hot-breathed, foul-mouthed, beastly husband; but we compassionate them still more at having to rear a set of simple, irritable, and ungovernable children, as the legitimate fruit, the primogenital fruit, of a drunkard's love. For the sake of the race, the drinker of ardent spirits should be separated from the domestic bed and board, and the wife, on establishing the fact of habitual intemperance, be entitled to a divorce. Maternal drunkenness should condemn to perpetual celibacy, seclusion from all connubial endearment in the relationship of

life. A drunken mother, a drunken father, a drunken husband, a drunken wife! fountains of seminal pollution, and a country's curse! Flee the inebriate, ye fair, as ye would a deadly malaria polluting equally the body and soul. Independent of a pernicious example, there is "death" poisoning the very fountain of human nature itself. The sins of the parent are thus visited on the child unto the third and fourth generation. No system of education, nor grace itself, can eradicate this evil. The nervous, imbecile child will be nervous and idiotic still. Mr. Combe, in his *Constitution of Man*, has an illustration of the laws of organic life, in the case of a young couple, who, drunk with wine, spent the evening of their first and last interview in a licentious manner, and the fruits of their illicit intercourse was a drunken, idiotic child. Let no man keep company with his wife for the sake of posterity, except when he is sober, for they usually prove wine-bibbers and drunkards whose parents beget them when they are drunk. Dr. Gall believed drunkenness an hereditary cerebral disease, and notices a Russian family who, throughout three generations, were individually the victims of the vice. Burton, the greatest of all observers, in the Anatomy of Melancholy, says: "If a drunken man begets a child, it will never, likely, have a good brain."

Temperance is a masonic virtue. And let it be held in everlasting remembrance, that *intemperance* is a most fatal and destructive vice. The temptations and delusions of this adversary of our peace, the treacherous arts by which it flatters us from the paths of rectitude, and the syren song by which it lures us into its foul embrace, surpass the powers of description. The cursed, fascinating, fatal charm by which it binds the faculties, captivates the heart, and perverts and paralyzes the understanding, is matter of the profoundest astonishment. Before the danger is discovered escape is hopeless and the willing victim irretrievably lost. Floating gently down a smooth and delightful current toward the brink of tremendous cataracts, he sees no necessity of resisting its force, perceives not its increase, nor reflects that he is approaching the danger. Every moment the power and inclination to resist diminish, while the danger is increased. He approaches, perceives the dashing, hears the roaring, and feels the trembling. The current is accelerated, it becomes irresistible, he is hurried to the brink, the abyss yawns, he is swallowed in the vortex and lost forever. Is the charm irresistible? Does the malady admit no cure? Is the calamity inevitable? Can nothing be done by *masons* to prevent it? Yes. Let them beware that they never countenance or indulge an intemperate brother. Let them administer correction with the hand of friendship. Let the admonition be honest, faithful, and seasonable.

They will pardon my zeal, for it is in the cause of humanity. I am pleading for the disconsolate mother, the hapless orphan, and the broken-hearted and distracted wife. I come with the tears of disappointed love, and the anguish of the wounded heart. I plead in the name and behalf of suffering virtue, neglected and abandoned for revel and riot. I imagine I hear a voice from the dark and dismal mansions of the dead, saying, "Oh, ye sons of dissipation and excess! ye prodigals, who riot and wanton with the gifts of a bounteous Providence! come and behold the companions of your revels, the victims of your folly. See the father's pride and mother's joy, snatched from their embrace and hurried headlong to an untimely tomb. See the flower of youth and beauty shedding its fragrance and displaying its glory; but ere the morning dew has escaped on the breeze, it sickens, withers, and dies. Here the object of virtuous affection; there the promise of connubial bliss; this the hope of his country, and that the encouragement and consolation of religion — all poisoned by intemperance, all doomed to a premature and disgraceful death. Look at these and be admonished."

The following fact, as related by Prof. Sewall, is a serious warning to men who drink ardent spirits: "A man was taken up dead in the streets of London, after having drank a great quantity of whisky. He was carried to Westminster Hospital and there dissected. In the ventricles of the brain was found a considerable quantity of limpid fluid, impregnated with whisky, both to the sense of smell and taste, and even to the test of inflammability. The liquid appeared as strong as one-third whisky, and two-thirds water."

What strong infatuation is it that tempts men to drink alcoholic liquors to excess, when facts and reason, and nature and religion, are continually warning them of the inevitable train of disasters and evils consequent thereon!

When our senses warn us of the immediate danger of a precipice close at hand, have we not prudence to avoid it, clinging to life as we do with a cowardly tenacity? And when physicians demonstrate to us the poisonous, deadly influence of ardent spirits upon the system, and all experience illustrates the truth, why have men not sense and consistency to forsake the miserably foolish indulgence of drinking poison.

Above all, let me urge on those who would bring out and elevate their higher nature, to abstain from the use of spirituous liquors. This bad habit is distinguished from all others by the ravages it makes on the reason, the intellect; and this effect is produced to a mournful extent, even when drunkenness is escaped. Not a few men, called temperate, and who have called themselves such, have learned, on ab-

staining from the use of ardent spirits, that for years their minds had been clouded, impaired by moderate drinking, without their suspecting the injury. Multitudes in this city are bereft of half their intellectual energy, by a degree of indulgence which passes for innocent. Of all the foes of the working class, this is the deadliest. Nothing has done more to keep down this class, to destroy their self-respect, to rob them of their just influence in the community, to render profitless the means of improvement within their reach, than the use of ardent spirits as a drink. They are called on to withstand this practice, as they regard their honor, and would take their just place in society. They are under solemn obligations to give their sanction to every effort for its suppression. They ought to regard as their worst enemies, (though unintentionally such,) as the enemies of their rights, dignity, and influence, the men who desire to flood city and country with distilled poison.

If we wish to know who is the most degraded, and the most wretched of human beings, look for a man who has practiced this vice so long that he curses it and clings to it; that he pursues it because he feels an evil spirit driving him on toward it; but, reaching it, knows that it will gnaw his heart and make him roll himself in the dust with anguish and despair; and yet he says "one glass more and I have done." Beware of "This once;" it has led its thousands to ruin.

People who suffer from nausea and want of appetite—and there are not a few who are habitually ailing in this way, who seldom indeed during a long life have felt really well—often find out, or are told by officious friends, that a little alcohol just before a meal will give relief. Brandy, gin, bitters, etc., are taken for this purpose, and a worse system has never been carried out. That bad habit of taking now and then ginger brandy, cherry bounce, or the worse one of frequently imbibing strong sherry for relieving a sensation of hollowness, or faintness, or fulness, or all-overishness, has been the ruin of thousands. Once acquired, many find it difficult to give up this vicious practice.

Bad indeed is the fashion of taking just before dinner a small dose of brandy, or wine, or some other strong alcoholic stimulant, to excite the appetite in order that justice may be done to the repast. If a man cannot eat his dinner without first taking a stimulant, he had better go without it. He might wait a few hours, and then he would probably be able to take simple food without the help of condiments or stimulants.

Doctors are often accused of teaching and encouraging people to "tipple," because in certain morbid conditions they have found it necessary to prescribe stimulating doses of alcohol. However, many thousands who have never consulted a doctor in their lives, take it on other grounds,—take it because they like it, or because they see others take it, or like the sensation it produces. Many will admit that they began when they suffered from a "sinking sensation," or uneasiness about the stomach, and soon discovered that the unpleasant feeling was invariably relieved if they swallowed a little brandy. The little gradually increased. Other unpleasant sensations, instead of occurring once or twice a day, occurred many times, and the victim will tell you that he was obliged to resort to the remedy in order to do his work. Thus not a few become slaves to alcohol.

ON LIFE AND MORALS.

BY JOHN C. GUNN, M.D., REVISED.

ADVICE TO THE UNMARRIED.

IN the selection of a companion for life, it is proper that every effort should be made to avoid evil; for this express end we are endowed with qualities of foresight and prudence, and by permitting our passions to overrule our judgment in these matters, we frequently destroy our happiness and entail misery upon our offspring; by many this matter is entirely disregarded, and with others the danger lies in ignorance. I am well aware that this is, to some, a delicate subject, yet truth is my compass, and it is my duty fearlessly and honestly to point out the danger and the consequences which usually result from, and greatly affect, the married state, not only of the immediate parties but of their posterity. One of these laws bears reference to the consanguinity of the parties, or in other words, where they are related to each other.

All experience shows that an unsoundness of constitution is the unavoidable inheritance of those who derive their existence from parents nearly allied in blood. Certain it is that the children of parents nearly allied in blood are, in many more instances, conspicuously unsound both in body and mind, than those of parents who stand in no relationship to each other. Often they are well enough to pass amidst the crowd of mankind; and such instances are apt to be adduced in defence of a marriage of the kind in question. But these are exceptions to a rule, or perhaps we should rather say, that these are only instances, in which the unsoundness chances to be small, or not sufficient to be observable where so many are, from other causes, unsound. That there is a greater likelihood of conspicuously unsound children from such marriages appears to be established beyond contradiction. Such marriages ought to be avoided, because in them there is danger incurred, without any of those good reasons or ends, which alone can sanction the incurring of any such risk. It is very unfortunate that cousins, from the attachment of relationship, the frequency of their intercourse in the same family, and other circumstances, should be apt to entertain for each

other the tender feelings which give the wish for a matrimonial union.

But these are only reasons why the greater pains should be taken to warn all such persons against the danger in question. Friends, instead of encouraging it, as they often do, as a matter of policy, to bring cousins together for money, should exert all their eloquence to depict to them the terrible griefs which attend a progeny irremediably weak and liable to perish before their time. It would even be proper to make this a point in the education of all young persons; for what is of more importance than that persons entering into life, should be biassed from a step which is likely to make life a scene of continual misery. Delicacy, it may be said, dictates silence on this subject; but certainly it must be a false delicacy which can impose such a restraint — a restraint as to words, while conduct is left free to the most disastrous errors; nor would we only call on the young of both sexes, to repress the feelings which are apt to lead them into alliances with their kindred. I have no doubt, that if circumstances made it possible or prudential for persons of different countries to marry, it would be much better, as they would thereby produce a vigorous race of people, both physically and mentally. For example, we see the advantages of crossing the breeds of animals, and the importance in agriculture of sowing grain which has been raised from a different soil. These are illustrative facts, and if the same amount of knowledge and care, which has been taken to improve the domestic animals (as I have heretofore remarked), had been bestowed upon the human species in the last century, there would not have been so many moral patients for the lunatic asylum, or for our prisons, as at present. That the human species are as susceptible of improvement as the domestic animal, who can deny?

Then is it not strange that man, possessing so much information on this subject, and acknowledging the laws which govern such matters, should lose sight of these laws in perpetuating his own species? Yet how short-sighted is that individual, who, in forming a matrimonial connection, overlooks the physical and mental constitution which his children will be likely to inherit, and also that a great portion of the happiness or misery of his future life, will depend upon the conduct of these children. And again; that their manifestations, either good or evil, will be the effect of the mental, moral, and physical organization which they inherit.

The time is fast approaching when attention must be paid to this subject; for the proof is so evident, and the facts so easily shown, that the parent will be as much blamed as pitied for the bad morals and physical defects of his children. That the features, voice, and

manner of parents are often transmitted to their children, is a familiar fact, though it has not received the attention its importance is so well entitled to; this is equally true of the hereditary peculiarities indicated by genius, infirmities of temper, and tendency to bodily ailments and disease. But we must take care not to identify the possession of genius with its determinate and successful display. The same faculties which were allowed to remain dormant, or which were faintly exhibited in the parent, may, when transmitted to the child, and fostered by opportunity and education, with perhaps the additional incentives of self-love and firmness of purpose, shine out brilliantly. Taste in the father is expanded into genius in the son; the same intellectual powers and peculiarities being possessed by both, the difference will consist in the superior vigor of one over the other. We are also to remember that whatever there is marked in the character of either mind or body, will be exhibited in the offspring, with modifications, depending upon the similarity or difference in these particulars, between the father and mother. This last is an important consideration, when we desire to solve the problem of hereditary qualities as an evidence of the fact, and to illustrate the hereditariness of genius.

Raphael's father was himself an artist. The mother of Vandyke was distinguished for painting flowers. The grandfather of the eccentric Benvenuto Cellini was an architect; and his father versed both in architecture and in drawing. Of Parmigiana's parents we know but little, his father dying when young; but both his uncles were painters, and became his preceptors in an art, in some parts of which he rivaled Corregio himself. Tasaro's father gave him instructions in drawing. Vanloo, commonly called the Chevalier Carlo, State Painter under Louis XV., and an artist of deserved eminence, was the brother, son, grandson, and great grandson of painters. Horace Vernet, who ranks among the foremost of the modern French school, is the son of Charles Vernet, famous for his paintings of horses and farm-yard scenes, in which these animals are the chief figures; and grandson of the Joseph Vernet, so celebrated for his marine views. The brother of this last, though a bookseller by trade, was fond of painting, which he sometimes practiced, and his pictures have been mistaken for those of Joseph. Titian's two younger brothers, and son, and nephew, and grand-nephew, were painters. The strong family resemblance of genius is well evinced in the Caracci, of whom Louis and his three cousins, Augustine, Annable, and Francis, were the distinguished heads of the Bolognese school of painting. Antonio, the son of Augustine, gave early promise of greatness in the same line in which he was arrested by death. In

the sister art of music, similar instances of the inheritance and subsequent transmission of genius, might be readily furnished. The father of the tender Mozart was a violinist of reputation; and the sister of this celebrated composer displayed as precocious a musical talent as himself. He left two sons, one of whom is a musical director at Lemberg. Beethoven was the son of a tenor singer. More than fifty music composers have proceeded from the family of John Sebastian Bach, a name so celebrated in musical literature.

Among the examples of inherited bodily infirmities and peculiarities of intellect and feeling in distinguished geniuses of later days may be cited Johnson, Burns, Byron. The father of Dr. Johnson was (says Boswell), a man of large and robust body, and of a strong and active mind; yet, as in the most solid rocks, veins of unsound substance are often discovered, there was in him a mixture of that disease, the nature of which eludes the most minute inquiry, though the effects are well known to be a weariness of life, an unconcern about those things which agitate the greater part of mankind which produces a general sensation of gloomy wretchedness. From him, then, (continues the biographer,) the son inherited with some other qualities "A vile melancholy," which, in Johnson's own too strong expression of any disturbance of the mind, "made him mad all his life, at least not sober." Johnson's mother was a woman of distinguished understanding, of whom it was said, in reference to her probable elation at her son's celebrity, that although she knew his value, she had too much good sense to be vain of him. The disease of scrofula, or King's Evil, under which he suffered in early life, so much as to have his countenance disfigured, and to lose the sight of one of his eyes, was a part of his inheritance from his father, and the direct consequence of his peculiar bodily frame. In him was seen that precocity of intellect and facility of attainment which are so commonly associated with this disease.

Burns, who was constitutionally melancholy and hypochondriacal, derived from his fathar a robust and irritable structure and temperament, both of body and mind. In features and general address, the poet bore a greater resemblance to his mother. From her he inherited that fondness for ballads and traditionary lore, which was the germ of his subsequent poetical greatness.

Of Byron's inherited peculiarities, we can not better speak than in the language of his biographer. "In reviewing," says Moore, "thus cursorily the ancestors, both near and remote, of Lord Byron, it can not fail to be remarked how strikingly he combined in his own nature some of the best, and perhaps worst, qualities that lie scattered through the various characters of his predecessors — the generosity,

the love of enterprise, the high-mindedness of some of the better spirits of his race, with the irregular passions, the eccentricity, and daring recklessness of the world's opinion, that so much characterized others."

History furnishes us with no example of a man of inventive genius, or large general powers of understanding, who was born of imbecile parents, or in other words, a foolish father or mother, and I assert it without fear of contradiction, that those who have figured most conspicuously on the great theater of life, have been indebted to inheritance for that vigor of intellect which has given them the mastery of their fellow-beings, and as an evidence of the fact, I refer you to the name of one who is identified with the most astounding changes and revolutions in modern Europe. "The father of Napoleon Bonaparte," says Sir Walter Scott, "is stated to have possessed a very handsome person, a talent for eloquence, and a vivacity of intellect, which he transmitted to his son." And again he remarks: "It was in the middle of civil discord, fights and skirmishes, that Charles Bonaparte married Letitia Ransoline, one of the most beautiful young women of the island of Corsica, and possessed of a great deal of firmness of character. She partook of the dangers of her husband during the years of civil war, and is said to have accompanied him on horseback on some military campaigns, or perhaps hasty flights, shortly before being delivered of the future Emperor."

Frequent intermarriages among the members of a particular class, as nobility, royalty, or relations, is followed by a deterioration of the mental and physical energies; the tendencies to particular diseases which might, under different circumstances, have been rendered nugatory, now acquire a fearful force. In this way has been brought about the degeneracy and even idiocy of some of the noble and royal families of Spain and Portugal, who still persist in marrying near relations; from a similar cause proceeded the visible feebleness of character of the old French noblesse. They had become, to use the language of a distinguished medical writer of their own nation, rickety, consumptive, and insane. The revolution, he adds, brought about another race of men, with better hopes. Among other examples, is one of a noble family, four successive generations of which were affected with aneurism, or morbid enlargement of the heart. Testimony equally strong, and to the same effect, is borne by the most experienced writers on insanity. Dr. Burrows states that hereditary predisposition to this disease, could be distinctly ascertained in six-sevenths of his patients. He states that frequency of transmission is greater by a third on the part of the mother than of the father.

We find then in this inheritance and community of disease, reasons

of a very imperative nature, distinct from moral and social considerations, why laws have been so generally promulgated from Moses down to the present time, against persons within certain limits of consanguinity, or in other words relations, intermarrying. Love may be blind to laws which are firmly based on nature; and while condemning, we must often pity its wanderings; but no such toleration ought to be extended to the union between members of the same family, brought about by heartless avarice or ambition, for the purpose of retaining wealth or preserving a title; when the consequences of this are often the transmission into another generation, of infirmities in an aggravated shape, which a more natural and honorable course might have entirely prevented, or at least greatly mitigated. How many millions of the human family have been shipwrecked on the rock of marriage. If there be a hell on earth, it is an ill-assorted marriage; for a woman not to love her husband, to possess none of that kindly and feminine affection, which magnifies the excellence it finds, and softens away the very fault it discovers, is truly deplorable. For mutual indulgence is the only safeguard of domestic content.

Many a heavy sigh is heaved — many a heart is broken — many a life is rendered miserable by the terrible infatuation which parents often evince in choosing a life-companion for their daughters. How is it possible for happiness to result from the union of two principles so diametrically opposed to each other, as virtue is to vice? And yet, how often is wealth considered a better recommendation to a young man than virtue? How often is the first question which is asked respecting the suitor of a daughter, "Is he rich? — Is he rich?" Yes, he abounds in wealth; but does that afford any evidence that he will make a kind and affectionate husband? Is he rich? Yes, his clothing is purple and fine linen, he fares sumptuously every day, but can you infer from this that he is virtuous? Is he rich? Yes, he has thousands floating on every ocean; but do not riches sometimes take wings and fly away? And will you consent that your daughter shall marry a man who has nothing to recommend him but his wealth? Ah! beware! the gilded bait sometimes covers a barbed hook. Ask not, then, "Is he rich?" but, "Is he virtuous?" Ask not, then, if he has wealth, but if he has honor? and do not sacrifice your daughter's peace for money, which is the root of all evil. How many conclude that nothing will do for their children but wealth; it is their god, and the god of their families. Disappoint them of their children marrying rich, and they mourn as if the highest end of life were defeated. How truly is it written, that "they that will be rich, fall into temptations and snares, and into many foolish lusts, which drown men in destruction and perdition." Seek, then, for your

children a good character, a well-trained mind, virtue, and, that purest of all earthly treasures, the hope of heaven. The consciousness of divine approbation and support, and a steady hope of future happiness communicates a peace and joy, to which all delights of the world bear no resemblance.

The first question, "Is she rich?" If so, the wife becomes the purchaser of the husband, and she that can boast of having the largest fortune, has the greatest number of admirers. We can not but regret that so many of our own sex are so debased and degenerate, as to sacrifice every virtuous principle for the gain of riches. We would ask any reflecting mind, whether it is this that can purchase virtue; whether it is this which can obtain for them that serenity of mind which is the result of a life of rectitude and prudence; and above all whether this will procure or elicit intrinsic love, that precious gift of heaven? The greatest enemy of true love, in the present day, is the mercenary spirit of the times. The practice of forming matrimonial connections from mere pecuniary considerations is becoming entirely too frequent. Of course, matrimony without reasonable prospect of income is wrong. What we denounce is union for fortune, without suitableness of character, or sympathy of heart. Most of the unhappiness of the married state arises from the neglect of these things. How can parents, who do not themselves love, expect the education of the heart to prosper in their children? Half the sneering, selfish, unbelieving men of this world are the offspring of ill-assorted unions, and drew in their skepticisms, as to the power and beauty of the affections, with their mother's milk. If it could always be remembered that marriage affects not only the happiness of the pair entering into its bonds, but the weal and woe, temporal and eternal, of their progeny, it would be contracted with more deliberation, as true love would have more to do with it, and worldly pelf less.

THE MOTHER.

THE memories of childhood, the long, far away days of boyhood, the dear mother's love and prayer, the voice of a dear departed play-fellow, the ancient church and school house, in all their sweet and hallowed associations, come upon the heart in the dark hour of sin and sorrow, as well as in joyous time, like the passage of a pleasantly remembered dream, and cast a ray of their own hallowed purity and sweetness over them.

How all-powerful, for good or evil, is the influence of a mother. During those hours of infancy, passed in unavoidable seclusion, when the affections and mental powers can be moulded into any form by the plastic hand of maternal love, then it is that the bent is taken for weal or woe, which all future life can not alter. The father, whether he hold a public station, or in a private capacity, sees but little and at distant intervals, of his children, and has hardly time to salute them with a hurried embrace and a kiss of tenderness, before his avocations summon him again into the great world, to engage once more in its engrossing pursuits. But the mother, for whom domesticity has a charm, to whom her children are company and the world, exercises over their nascent powers an influence proportioned to her own good sense and attachment to the idols of her heart — omnipotent though imperceptible — and it is not too much to say, that all the kindly sympathies and swelling affections of the youth and mature man, can be traced to their rise when lying at a mother's feet, or listening, with head on her knees, to her mild yet awful rebuke.

While the confiding voice of childhood appeals to her in doubt, ignorance, danger, or distress, she feels that by her child she is invested with the attributes of Deity; while it is nestling itself in her arms and hanging with unbounded credence upon her words, her spirit is startled into fresh resolves of perfection, by the fearful conviction that she is its book of wisdom, love and beauty; and, if a Christian mother, she searches, with an almost agonizing anxiety, for the best possible means of transferring the earth-bound devotion of her child to *Him*, who is alone worthy of worship. As oft as the consciousness of her unbounded influence flashes upon the Christian mother's heart, it is followed by the conviction that her image should hold but a secondary place in the affections of that being which has been the burden of her days and nights of care; and while she labors and prays that it may be even so, who can paint the desolation that settles upon her soul, and makes her cling closer to her hopes of heaven, as imagination, stealing long years ahead, gives to her child a companion and offspring, thus removing her in care-worn age, from the second even to the fourth place in its regard.

Philosophers have analyzed, divines lectured, and poets sung of maternal love; but which of them has brought from its fountains, to the heart of man, those nameless, numberless, impassioned sympathies which make the melody of a mother's tenderness? No, there

ENGRAVED BY JOHN SARTAIN. THE CRADLE BY MEYERHEIM.

is nothing like it. In all after years we may set our heart on what joy we will, but we shall never find anything on earth like the love of a mother. Perhaps a more beautiful compliment was never paid to female character than that rendered by the late John Randolph, of Roanoke. When minister to France, he said he was kept from whirling down the tide of infidelity, which was then carrying everything before it, by the remembrance of that when a child his dear mother would put his little hands together, and teach him to say, "Our Father, who art in Heaven!" Touchingly beautiful as is this little story, it is but the history that thousands of others might relate with equal interest. Oh, man! canst thou read through the tear that trembles in the mother's eye, the piercing grief of her soul, as, gazing upon the fond prattler, the thought protrudes itself that all her pains, her sleep-dispelling solicitude, and above all, the strength and devotedness of her love, may be repaid with ingratitude.

When the vail of death has been drawn between us and a mother, how quick-sighted do we become to her merits, and how bitterly do we then remember every word or look of unkindness which may have escaped us. How careful should such thoughts render us in the fulfillment of those offices of affection which it may yet be in our power to perform; for who can tell how soon the moment may arrive when repentance can not be followed by reparation. Immediately after the organization of the present government, General Washington repaired to Fredericksburg, to pay his humble duty to his mother, preparatory to his departure to New York, an affecting scene ensued. The son feelingly remarked the ravages which a lingering disease had made upon the aged frame of his parent, and thus addressed her: "The people, mother, have been pleased, with the most flattering unanimity, to elect me to the chief magistracy of the United States, but before I can assume the functions of that office, I have come to bid you an affectionate farewell. So soon as the public business, which must necessarily be encountered in arranging a new government, can be disposed of, I shall hasten to Virginia, and——." Here the matron interrupted him: "You will see me no more, my dear son; my great age, and the disease that is fast approaching my vitals, warn me that I shall not be long in this world. I trust I am somewhat prepared for a better. But go, George, fulfill the high destiny Heaven appears to assign you; go, my son, and may that Heaven's and your mother's blessing be with you always." The President was deeply affected. His head rested upon the shoulder of his parent, whose aged arm feebly, yet fondly, encircled his neck. That brow, on which fame had wreathed the greatest laurel virtue ever gave to created man, relaxed from its lofty bearing. That look, which could have awed a Roman

Senate in its Fabrician day, was bent in filial tenderness upon the time-worn features of this venerated mother. The great man wept. A thousand recollections crowded upon his mind, as memory, retracing scenes long past, carried him back to his paternal mansion, and the days of his youth; and there the centre of attraction was his mother, whose care, instruction, and discipline, had prepared him to reach the topmost heights of laudable ambition; yet how were his glories forgotten while he gazed upon her from whom, wasted by time and malady, he must soon part to meet no more on earth! The matron's predictions were true. The disease which had so long preyed upon her frame, completed its triumph, and she expired at the age of eighty-five, confiding in the promises of immortality to the humble believer.

"A good boy generally makes a good man," said the mother of Washington; "George was always a good boy." Here we see one great secret of his greatness. George Washington had a mother who made him a good boy, and instilled into his heart those principles which raised him to be the benefactor of his country, and one of the brightest ornaments of the world. The mother of Washington is entitled to a nation's gratitude. She taught her boy the principles of obedience, and moral courage, and virtue. She, in a great measure, formed the character of the hero and the statesman. It was by her own fireside that she taught her playful boy to govern himself, and thus was he prepared for the brilliant career of usefulness which he afterward pursued. We are indebted to God for the gift of Washington; but we are no less indebted to Him for the gift of his inestimable mother. Had she been a weak, and indulgent, and unfaithful parent, the unchecked energies of Washington might have elevated him to the throne of a tyrant, or youthful disobedience might have prepared the way for a life of crime and a dishonored grave.

Byron had a mother just the reverse of Lady Washington: and the character of the mother was transferred to the son. We can not wonder then at his character and conduct, for we see them to be the almost necessary consequence of the education he received, and the scenes he witnessed in his mother's parlor. She would at one time allow him to disobey with impunity; again, she would fly into a rage and beat him. She thus taught him to defy authority, human and divine; to indulge without restraint in sin; to give himself up to the power of every maddening passion. It was the mother of Byron who laid the foundation of his pre-eminence in guilt. She taught him to plunge into that sea of profligacy and wretchedness, upon whose agitated waves he was tossed for life.

Were the affections of the mother felt and cherished by her chil

dren with corresponding sympathy, doubtless this earth would exhibit much more of heaven than at present. A mother teaching her child to pray is an object at once the most sublime and tender the imagination can conceive. Elevated above earthly things, she seems like one of those guardian angels, the companion of our earthly pilgrimage, through whose ministration we are inclined to do good and turn from evil. A dear mother is the first to fold and rock our puny frames; the last to desert our clay cold dust; the rich, rejoicing, fresh, lovely, and exuberant vine to twine in graceful fitness round the rugged oak of manhood, clinging the closer the louder the storm blows and the thunder roars. There is something indescribably lovely in a devotedly pious mother; something that reminds the soul at once of those bright angelic spirits which surround the throne of God. That calm serenity and composure, those eyes which beam with looks of holy tenderness and compassion for immortal souls.

It was December. The ground was covered with snow, the north wind blew violently, and whistled as it passed among the willows that shaded the tombs of the grave-yard of the village of Peasley. A watchman was finishing his nightly rounds. At that moment the moon cast her pale beams over that portion of the burial ground appropriated to the poor; the sound of some one in great distress attracted his attention, and, as he approached a new made grave, he found a young child, who, extended on the ground, was endeavoring to dig the earth up with his little hands. It was poor Paul, left an orphan in the village but two days before. "What are you doing there, my boy?" said the watchman. The poor boy raised his head, and, wiping the tear from his cheeks, replied, "I am looking for my poor mother." The watchman, affected by the answer, took the child in his arms and carried him from the mournful place. For several days he was carefully watched; however, he soon stopped crying, and every one thought he had got over his sorrows; but about a month after, during a night still colder, he was found lying on his mother's grave, dead. The poor orphan had found her! The next day he was buried by her side. "Blessed are the poor in spirit, for they shall see God." If the love of a mother surpasses all other love, you, who are a son, ought with the full measure of gratitude, to return her affection. You are bound to her by the strongest ties; treat her with never-failing tenderness. She will love you whatever be your character, but let her have cause to glory in her child. Disappoint not her hopes, do not, by your vices, plunge a sword into her bosom, do not break her heart, do not compel her to wish that God would hide her in the grave. Look unto Jesus, the pattern of every excellence; love your mother as he loved his mother; obey, honor, cherish, and

protect her, as he obeyed his earthly parent. Finally, imprint on your mind the words of the wise man: "He that is obedient unto the Lord, will be a comfort to his mother." Remember that thou wast born of her, and how canst thou recompense her the things she has done for thee? Forget not, then, the sorrows of thy dear mother.

In no situation, and under no circumstances, does the female character appear to such advantage as when watching beside the bed of sickness. The chamber of disease may, indeed, be said to be woman's home. We there behold her in her loveliest, most attractive point of view; firm, without being harsh; tender, yet not weak; active, yet quiet; gentle, patient, uncomplaining, vigilant. Every sympathetic feeling that so peculiarly graces the feminine character, is there called forth; while the native strength of mind, which has hitherto slumbered in inactivity, is roused to its fullest energy. With noiseless steps she moves about the chamber of the invalid; her listening ear, ever ready to catch the slightest murmur; her quick, kind glance to interpret the unuttered wish, and supply the half-formed want, she smoothes with careful hand the uneasy pillow which supports the aching head, or with cool hand soothes the fevered brow, or proffers to the parching lip the grateful draught, happy if she meet one kind glance in payment for her labor of love. Her's is the low whispering voice which breathes of life and hope, of health in store for happy days to come; or tells of better and of heavenly rest, where neither sorrow nor disease can come; where the dark power of death no more shall have dominion over the frail, suffering, perishable clay. Through the dim, silent watches of the night, when all around are hushed in sleep, it is her's to keep lone vigils and to hold communion with her God, and silently lift up her heart in fervent prayer, for the prolongation of a life, for which she cheerfully would sacrifice her own. And even when exhausted nature sinks to brief repose, forgetfulness is denied. Even in sleep she seems awake to this one great object of her care. She starts and rises from her slumbers, raises her drooping head, watches with dreamy eyes the face she loves, then sinks again to rest, to start with every chime of the clock, or distant sound which formerly had passed unheard, or only served as a lullaby to her sweet sleep.

How lovely does the wife, the mother, the sister, or the friend, become to the eye of grateful affection while ministering ease, comfort, nay, almost life itself, to the husband, the son, the mother, or the friend.

A mother's love! How thrilling the sound. The angel spirit that watched over our infant years and cheered us with her smile! Oh!

how faithfully does memory cling to the fast fading mementoes of a parent's home, to remind us of the sweet counsels of a mother's tongue? And oh, how instinctively do we hang over the scenes of our boyhood, brightened by the recollections of that waking eye that never closed while a single wave of misfortune or danger sighed around her child? Like the lone star of the heavens in the deep solitude of nature's night, she sits the presiding divinity of the family mansion, its delight and its charm, its stay and its hope, when all around her is overshadowed with the gloom of despondency and despair.

There does not exist anything in human nature more perfect than the affection which a mother bears toward her children. Love in its true character, is of divine origin, and an emanation from that spirit who himself is love, and though often degraded on earth, we yet find it pure, sublime, and lasting within the maternal heart. Man is frequently captivated by mere external graces, and he dignifies that pleasure which all experience in the contemplation of the beautiful, by the title of love; but a mother makes no distinction, she caresses the ugly and deformed with kindness equal to, if not surpassing, that she bestows on the more favored. Too frequently are interested motives the basis of apparent affection, but it is not so with her, who clings more fondly to her children in their poverty, their misfortunes, and their disgrace. The silken chain with which we are bound one to the other, is sometimes broken with facility; a word, a look, may snap the links never to be re-united; friendship decays or proves false in the hour of need, we almost doubt the existence of constancy — away with this doubt while the maternal heart continues as a temple for the dwelling of God's holiest attribute.

She has watched her infant from the cradle; she will not desert him until separated by the grave. How anxiously she observes the budding faculties, the expansion of mind, the increasing strength of body! She lives for her child more than for herself, and so entwined has her nature become with his, that she shares in all his joys, and alas! in all his sorrows. "Not because it is lovely," says Herder, "does the mother love her child, but because it is a living part of herself — the child of her heart, a fraction of her own nature. Therefore does she sympathize with his sufferings; her heart beats quicker at his joys; her blood flows more softly through her veins, when the breast at which he drinks knits him closer to her."

Should her son fall into poverty, become a bankrupt in fortune, he is shunned by former acquaintances and despised by most of his fellow beings; but one will there be found, like a ministering angel at his

side, cheering his despondency, encouraging him to renewed exertions, and ready herself to become a slave for his sake. If exposed to censure, whether merited or unmerited — all men rush to heap their *virtuous* indignation on his head; they have no pity for a fallen brother, they shun or they curse him. How different is the conduct of that being who gave him life! She can not believe the charge: she will not rank herself among the foes of her child. And if at length the sad truth be established, she still feels that he has not thrown off *every* claim, and if an object of blame, he is also one of pity. Her heart may break, but it can not cease to love him. In the moments of sickness, when stretched on the bed of pain, dying perhaps from a contagious disease, he is deserted by his professed friends, who dare not, and care not to approach him — one nurse will be seen attending him; she will not leave his precious existence to the care of hirelings, though now every instant in his presence seems an hour of agony. His groans penetrate her heart, but she will not let him hear the sad response; she weeps but turns away, lest he should see her tears. She guards his slumbers, presses his feverish lips to her's, pours the balm of religion on his spirit, and points him to the mercy of that Judge before whom he may shortly appear. When all is silent, she prays for his life; and if that may not be, for his happiness in the life to come. He dies. The shock perhaps deprives her of life, or, if not, she lives as one desolate and alone, anxiously looking forward to that world where she may meet her darling child, never to part again.

With equal simplicity and eloquence, the tender affection of Hagar for her child is expressed in the Old Testament. In a wilderness, herself parched with thirst and fainting from fatigue, she beholds her infant — her only companion — dying from want of nourishment. The water-bottle was empty. Placing her boy beneath a shrub, and moving to some distance, she cried, "Let me not see the death of my child! Let me not behold the severance of those ties which nature compels me to support and cherish! let not mine eyes witness the gradual departure of that angel spirit, which I had hoped would afford me comfort and consolation in my declining years." And "she lifted up her voice and wept." But she was not left childless, "for God was with the lad."

If we reflect upon the inestimable value of a true parent, we can appreciate the beauty of the psalmist's expression, when he compares himself, laboring under the extreme of grief, to one "*who mourneth for his mother.*" And was it not in accordance with the perfect character of our Saviour, that some of his last thoughts should be for the welfare of her who had followed him through all his trials?

When extended on the cross, pointing to the disciple whom he loved, he said to Mary, "Woman, behold thy son," and to the disciple, "Behold thy mother." And from that hour the disciple took her to his own home.

TO WIVES.

THE first inquiry of a woman after marriage should be, "How shall I continue the love I have inspired? How shall I preserve the heart I have won?" Marriage is a solemn and an important event. I care not respecting the circumstances that may be thrown around it; nor does it matter whether the rite be performed in Friend-like simplicity, or by every ceremony calculated to impress the senses, yet the importance of it remains — the awful responsibility continues. It may have been brought about by selfish and interested motives; it may be the result of parental authority, or it may, as it ought always to be, the result of pure love and strong attachment; yet in either case, it is alike binding for life, and will be the cause of happiness or misery, not only through time but in eternity.

How much then depends on this step, and what feelings press upon the mind! The home of childhood, the family circle, the loving mother, the kind father, the affectionate brother and sister, are all to be left, and another is to be your bosom companion — another to be the sharer of your joys and sorrows, your griefs and cares. New scenes, new duties, new trials, and new circumstances, will surround you, and you are now to act and live for others. Insincerity at the bridal altar is a crime of the blackest character, and he who would be false there would be false anywhere; and she who would be untrue at such a time, would be untrue on every occasion. But where all is sincerity, confidence and love, happiness is then present indeed, and will continue through life. Changes cannot alter their affection for each other; afflictions only bind them the closer. Cares and anxieties only afford opportunities for the exercise of sympathy, and every year unites them by nearer and dearer ties. Marriage places woman in that sphere where she may attain the greatest happiness, so does it advance her to a station of power and responsibility. Her power over her husband's happiness is almost absolute. By wisdom, by steadiness, by forbearance, by meekness, she may be to him a tower of strength; but no tongue can tell the ways in which she may annoy and render him wretched.

Then cultivate and exhibit with the greatest care and constancy,

cheerfulness and good humor; they give beauty to the finest face, and impart charms where charms are not. On the contrary, a gloomy, dissatisfied manner is an antidote to affection; and though a man may not seem to notice it, it is chilling and repulsive to his feeling, and he will be very apt to seek elsewhere for those smiles and that cheerfulness which he finds not in his own house. Endeavor to make your husband's habitation alluring and delightful to him. Let it be to him a sanctuary to which his heart may always turn from the calamities of life. Make it a repose from his care, a shelter from the world, a home not for his person alone, but for his heart. He may meet with pleasure in other houses, but let him find pleasure in his own. Should he be dejected, soothe him; should he be silent and thoughtful, do not heedlessly disturb him; should he be studious, favor him with all practicable facilities; or should he be peevish, make allowances for human nature; and by your sweetness, gentleness, and good-humor, urge him continually to think, though he may not say it, "This woman is indeed a comfort to me; I can not but love her, and requite such gentleness and affection as they deserve." Particularly shun what the world calls "curtain-lectures." When you shut your door at night, endeavor to shut out, at the same moment, all discord and contention, and look on your chamber as a retreat from the vexations of the world, a shelter sacred to peace and affection.

How indecorous, offensive, and sinful it is for a woman to exercise authority over her husband, and say, "I *will* have it so. It *shall* be as I like." But I trust that the number of those who adopt this unbecoming and disgraceful manner, is so small as to render it unnecessary for me to enlarge on the subject. The aim of a wife is to become the friend, the partner, the consolation of her husband, to educate her children, to shun every approach to extravagance. The want of economy has involved millions in misery. The power of a wife for good or evil, is altogether irresistible. Home must be the seat of happiness.

A good wife is to a man wisdom, and courage, and strength, and hope, and endurance. A bad one is confusion, weakness, discomfiture, and despair. No condition is hopeless, when the wife possesses firmness, decision, energy, and economy. There is no outward prosperity which can counteract indolence, folly, and extravagance at home. No spirit can long resist bad domestic influences. Man is strong, but his heart is not adamant. He delights in enterprise and action, but to sustain him he needs a tranquil mind and a whole heart. He expends his whole moral force in the conflicts of the world. His feelings are daily lacerated to the utmost point of endurance, by

perpetual collision, irritations, and disappointment. To recover his equanimity and composure, home must be to him a place of repose, of peace, of cheerfulness, of comfort, then his soul renews its strength, and again goes forth, with fresh vigor, to encounter the labor and troubles of the world. But if at home he finds no rest, and *there* is met with bad temper, sullenness, or gloom, or is assailed by discontent, complaint, and reproaches, the heart breaks, the spirits are crushed, hope vanishes, and the man sinks into total despair. Every wedded pair might be happy did they but bear each other's burdens, and strive with half the zeal they sometimes exert to make each other miserable, to contribute to each other's mutual happiness.

We conceive of no more heaven-like circle, than is embraced within the limits of a virtuous and happy family. There is nothing beneath the skies more ennobling to human nature, than such a household, where mildness and virtue, kindness and love, industry and peace, go hand in hand together; where a contented and cheerful spirit chases away the gloom of the world, and religion, with her sweet lessons of philosophy, softens and purifies the heart; where the head of the family is recognized and respected as such, and the greatest happiness within the circle is derived from his approving smile; where the low, sweet voice of woman is seldom heard, but in accents of gentleness and love, and the name of Mother is never uttered unassociated with some endearing epithet. Such a family can only be collected together under the influence of a happy marriage — a union of hearts as well as hands — a tie consecrated by pure and chaste affection — an engagement formed on earth but sanctioned in heaven. On such a union, the angels who dwell in the bright abode of the blest, must gaze with looks of interest and delight.

The gem of all others which enriches the coronet of a woman's character is unaffected piety. Nature may lavish much on her person; the beauty of her countenance; the grace of her mien; the strength of her intellect; yet her loveliness is uncrowned till piety throws around the whole the sweetness and power of its charms. She then becomes unworldly in her desires and aspirations. The spell which bound her affections to things below is broken, and she mounts on the silent wings of faith and hope to the habitations of God, where it is her delight to hold communion with the spirits that have been ransomed from the thraldom of earth, and wreathed with garlands of glory. Her beauty may throw a magical charm over princes, and conquerors may bow with admiration at the shrine of her beauty and love; the sons of science may embalm her memory in the page of history; yet her piety must be her ornament, her pearl. Her name must be written in the "Book of Life," that when the moun-

tains fade away and every memento of earthly greatness is lost in the general wreck of nature, it may remain, and swell the list of that mighty throng who have been clothed in the mantle of righteousness and whose voices are attuned to the melody of heaven. With such a treasure every lofty gratification on earth may be purchased; friendship will be doubly sweet; pain and sorrow will lose their sting, and the character will possess a price far above rubies; life will be but a pleasant visit to earth, and death the entrance upon the joyful and perpetual home. And when the notes of the last trump shall be heard, and sleeping millions awake to judgment, its possessor shall be presented faultless before the throne of God.

No man ever prospered in the world without the co-operation of his wife. If she unites in mutual endeavors, or rewards his labors with approving smiles, with what confidence will he resort to his merchandise or his farm, fly over lands, sail upon seas, meet difficulties, and encounter danger; for he knows that he is not spending his strength in vain, but that his labor will be rewarded by the sweets of home! Solicitude and disappointment enter the history of every man's life, and he is but half provided for his voyage who finds but an associate for happy hours, while for his months of darkness and distress he has no sympathizing partner. Two persons who have chosen each other out of all the species, with the design to be each other's mutual comfort and entertainment — have in that action bound themselves to be good-humored, affable, discreet, forgiving and patient, with respect to each other's frailties and imperfections to the end of their lives.

I have often had occasion to remark the fortitude with which women sustain the most overwhelming reverses of fortune. Those disasters which break down the spirit of a man, and prostrate him in the dust, seem to call forth all the energies of the softer sex, and give such intrepidity and elevation to their character that at times it approaches to sublimity. Nothing can be more touching than to behold a soft and tender female, who had been all weakness and dependence, and alive to every trivial roughness, while treading the prosperous paths of life, suddenly rising in mental force to be the comforter and supporter of the husband under misfortune, and abiding with unshrinking firmness the bitterest blasts of adversity.

With a true wife a husband's faults should be sacred. A woman forgets what is due to herself when she condescends to that refuge of weakness, a female *confidante*. A wife's bosom should be the tomb of her husband's failings, and his character far more valuable, in her estimation, than his life. If this be not the case she pollutes her marriage vow. Such a wife may do much for her partner in life, for

her family, for society, for the world; she will be truly blessed in the favor of God, and in death will have an approving conscience — having faithfully discharged her duty.

There is nothing under heaven so delicious as the possession of pure, fresh, immutable affection. The most felicitous moment of a man's life, the most ecstatic of all his seasons of delight, is that in which he receives an avowal of affection from the idol of his heart. The springs of feeling, when in their youthful purity, are fountains of unsealed and gushing tenderness — the spell that once draws them forth is the mystic light of future years, and undying memory. Nothing in life is so pure and devoted as woman's love. It matters not whether it be for a husband, or child, or sister, or brother, it is the same pure, unquenchable flame, the same constant and immaculate glow of feeling, whose undeniable touchstone is trial. Do but give her one token of love, one kind word, one gentle look, even if it be amid desolation and death — the feelings of that faithful heart will gush forth as a torrent, in despite of earthly bond or mercenary tie. More priceless than the gems of Golconda is the female heart; and more devoted than the idolatry of Mecca is woman's love. There is no sordid view or qualifying self-interest in the feeling. It is a principle and characteristic of her nature — a faculty and infatuation which absorbs and concentrates all the fervor of her soul, and all the depths of her bosom. I would rather be the idol of one unsullied and unpolluted heart, than the monarch of empires. I would rather possess the immaculate and impassioned devotion of one high-souled and enthusiastic female, than receive the sycophantic fawning of millions.

How sweet is the society of a beloved wife, when wearied and broken with the labors of the day, she comes to soothe with her endearments and tender care. The solicitude, the anxieties, and the heavier misfortunes of life, are hardly to be borne by him who has the weight of business and domestic cares at the same time to bear. But how much lighter do they seem, when, his necessary avocations being over, he returns to his home, and finds there a partner of his griefs and troubles, who takes for his sake her share of domestic labor and soothes the anguish of his fretted soul. A wife is not, as she is falsely represented and esteemed by some, a burden or a sorrow to man. No; she shares his burdens, and alleviates his sorrows; for there is no difficulty so heavy or insupportable in life, but it may be surmounted by the mutual labors and the affectionate concord of that holy partnership.

VIRTUE.

"'T is said of widow, maid and wife,
That honor is a woman's life."

THERE is nothing, perhaps, in which the boasted superiority of man over the female part of creation is marked with a blacker line, than the impunity afforded him in the commission of crimes which stain the character of woman with everlasting infamy. One false step, one deviation from the path of virtue, ruins her forever. No sooner does her fault become known, than she is the butt of scandal, and a mark for the finger of scorn. Her former friends slight and neglect her; her enemies triumph in her ruin; the neighbors resound her disgrace; she is the scorn of her own sex and the sport of ours; the virtuous shun her company as a dangerous infection; the eyes of modesty are averted at her approach, and the cheeks of innocence redden with a blush. Men of honor treat her with neglect, and libertines with saucy freedom. Nor is this all; she has many pangs to suffer from those who are her superiors only in artifice and cunning, and who, while they are equally guilty, owe all their apparent innocence to that craft which preserved them from exposure. Driven from society, an outcast and forlorn, what can she do? Forsaken by him who should have been her protector, neglected and despised, she becomes a prostitute for bread. She wanders away from her native village; whither she goes none care, and but few inquire: her degradation is complete. From the fashionable, she becomes the drunken and the public harlot; diseased, she is taken to the hospital or poor-house; dies; is sent to the medical college for dissection, and in the lime-sink her bones are deposited.

Reformation in the most abandoned of men is a matter of occasional observance: and temporary aberrations from the straight path of virtue, with them, without irretrievable confirmation in their errors, are instances of frequent occurrence. But the person of woman once tainted, the corruption is irremediable; the fountain of her thoughts once poisoned, there is no purity can ever flow therefrom — once chained to crime and her fetters are riveted for life.

When the dreary winter throws his mantle over nature, and strips the verdure of the forest and the plains, and binds his icy fetters on the limpid stream, there is a melancholy but happy anticipation of returning verdure; the season of flowers will come again; the stream will flow gracefully and lightly as before; the trees will again toss their cumbrous loads of greenness to the sunlight, and by mossy stone, and winding rivulet, the young blossom will start up as at the

bidding of the fairy guardians. But the heart of woman has no change like that of nature, it has no second spring time; once blighted in its hours of freshness, it wears forever the mark of the spoiler. The dews of affection may fall, and the gentle rain of sympathy be lavished upon it, but the sere root of blighted innocence will never again waken into life, nor the cherished flowers of hope blossom with their wonted beauty.

A large experience has taught me that, in a majority of cases, offenders exposed before human tribunals, the object of all earthly penalties, (which are, or ought to be, only inflicted for the prevention, and not the punishment of crime,) will be led to reform quite frequently, when of the male sex; but woman once arraigned, seldom concludes her iniquitous drama until death draws the curtain upon her. My practice has presented to me many appalling evidences of the irresistible truth of my conclusion, and as I have received them from the living impress, so have I recorded them with nothing extenuated, and surely I may add, nor aught set down in malice to the sex.

Beware, my daughter, beware of vice. The path of virtue is that of happiness; and rectitude of conduct will reward itself. Let a remembrance of the sad consequences ever guard you against the arts of a seducer. Whatever arguments may be used by the specious deceiver, remember, he who would lead you from the paths of virtue is your arch enemy, and whatever may be his pretence, his object is your ruin.

Virtue is of intrinsic value, and of indispensable obligation; not the creature of will, but necessary and immutable; not local or temporary, but of equal extent and antiquity with the Divine mind; not a mode of sensation, but an everlasting truth; not dependent on power, but the guide to power; virtue is the foundation of honor and esteem, and the source of all beauty, order, and happiness in nature. It is what confers value on all the other endowments and qualities of a reasonable being, to which they ought to be absolutely subservient, and without which the more eminent they are, the more hideous deformities and the greater curses they become. The use of it is not confined to any one stage of our existence, or to any particular situation we can be in; but reaches through all periods and circumstances of our being. Many of the endowments and talents we may now possess, and of which we are too proud, will cease entirely with the present state; but this will be our ornament and dignity in every future state to which we may be removed. Beauty and wit will die, learning will vanish away, and all the arts of life be soon forgotten, but virtue will remain forever. This unites us to the whole rational creation, and fits us for conversing with any order

of superior natures, and for a place in any part of God's works. It procures us the love and approbation of all wise and good beings, and renders them our allies and friends. But what is of unspeakably greater consequence, is that it makes God our friend, assimilates and unites our minds to his, and engages his Almighty power in our defense. Superior beings of all ranks are bound by it no less than ourselves. It has the same authority in all worlds that it has in this. The further any being is advanced in excellence and perfection, the greater are his attachments to it, and the more he is under its influence. To say no more, it is the law of the whole universe; it stands first in the estimation of the Deity; its original is his nature; and it is the very attribute that makes him lovely.

Such is the importance of virtue. Of what consequence is it not, therefore, that we practice it? There is no argument or motive which is at all fitted to influence a reasonable mind, which does not call us to this. One virtuous disposition of soul is preferable to the greatest natural accomplishments and abilities, and of more value than all the treasures of the world. If you are wise, then study virtue, and contemn every thing that can come in competition with it. Remember that nothing can more deserve our anxious thought or wish; that this alone is honor, glory, wealth, and happiness. Secure this and you secure much; lose this and much is lost.

Virtue is certainly one of the most noble and sure possessions that a man can have. Beauty is worn out by time, or impaired by sickness; riches lead youth rather to destruction than otherwise, and without prudence are soon lavished away; while virtue alone, the great good that is ever durable, always remains. She is preferable to wealth and a noble extraction. What a power there is in innocence! whose very helplessness is its safeguard; in whose presence even Passion stands abashed — turning worshipper at the very altar he came to despoil.

The vicious may prosper for a season, but virtue will triumph at last. The apparent success of the wicked should not discourage those who endeavor to live upright and consistent lives. If they live to see the end of the unrighteous, they will not feel a particle of envy at their success. A man may live long — be vile and unprincipled — and prosper through all his days; but does this prove that it is well with the vicious? Far from it. Mysterious are the workings of Providence; but the time will come when we shall see the wisdom of all the dealings of God. It is the testimony of revelation — it is the opinion of the wise and good of all ages — that the wicked shall not go unpunished. There is nothing like virtue, purity, to produce happiness and perfect peace of mind.

TO HUSBANDS.

THE happiness of the wife is committed to the care of the husband. Prize the secret trust, and never cause her to repent the confidence she has reposed in you. In contemplating her character, recollect the materials human nature is composed of, and expect not perfection. Do justice to her merits, and point out her faults with kindness. I do not ask you to treat her errors with indifference, but endeavor to amend them with wisdom, gentleness, and love. Do not jest about the bonds of a married state; and make it an established rule to consult your wife on all proper occasions. Your interest is her's, and undertake few plans contrary to her advice and approbation, for thousands of men have been ruined by neglecting this; for if the affair turns out ill, you are spared reproaches both from her and your own feelings. There is a sagacity, a penetration and a foresight into the probable consequences of events, characteristic of her sex, which, conferred by Divine Providence, makes her peculiarly calculated to give good advice. If you have any acquaintances — particularly females — whom, on reasonable grounds your wife wishes you to avoid, do so. Never witness a tear from your wife with apathy and indifference. Words, looks, actions, all may bear evidence of the feelings; but a tear comes direct from the heart, and speaks at once the language of truth and nature. Be assured when you see a tear on her cheek, her heart is touched, and do not, I again repeat it, do not behold it with coldness or insensibility. How simple and unaffected, and yet how eloquent, is a tear. It is the unequivocal language of the heart; it is the impassioned eloquence of feeling, before which the pomp and gloss of speech fade as the orient pearly dew drop before the morning sun. It must be an adamantine heart in which the responsive chord of sympathy does not respond to the tear of his wife. Remember, she is given to you by your heavenly father to soothe the trials of life, that she has many cares and sufferings to encounter of which you are not aware; then soothe her wounded and troubled spirit, and let bright beams of hope, joy, and happiness, again brighten her face. Oh! if there be melody on earth it lives in the soft accents of a sensitive woman, breathing forth her sorrows from life's creating fountain. Let her errors be overlooked, and remember that you yourself are not perfect. A penitent tear is the most propitious atonement that an humble spirit can offer at the shrine of God; it is the signet of heaven, with which the recording angel seals the pardon of an offending but contrite heart.

Of all the gratifications human nature can enjoy, and all the delight

it is formed to impart, none surpasses that which springs from the mutual affection of man and wife. The happiness which arises from conjugal felicity, is capable of withstanding the attacks of time, grows vigorous in age, and animates the heart with pleasure and delight through life.

No man ever prospered in the world without the consent and co-operation of his wife. Let him be ever so frugal, industrious, or successful, it avails nothing. But if she unite in mutual endeavors, or rewards his labor with an endearing smile, with what confidence will he resort either to his merchandise, or farm — perform the most laborious work, sail upon the sea, meet every difficulty, and encounter every danger — for he knows that his labor will be rewarded by the sweets of home and the smile of that dear wife, whose affectionate welcome and tenderness repay him for every grief, and pain; every misery loses the poignancy of its grief in that bosom formed for sympathetic kindness.

Let contradiction and ill nature be avoided at all times; remember the loving, faithful wife has other woes to endure than you are aware of, which delicacy prevents me from explaining. She has, at certain times, for it is her allotment, to feel and to encounter pain and suffering which demand patience and man's sympathy and forbearance. Then wound not, nor upbraid your wife; if suffering of any kind assail her, your tenderness and attention are particularly called for. A look of love, a word of pity, or sympathy is sometimes better than medicine. This, of all others, is the time to establish and strengthen that love, which time and circumstances can never eradicate. It is difficult to imagine what a blessing sweet words of kindness confer at a time like this. They subdue pain, penetrate the heart, and alleviate every painful emotion.

Never reproach your wife with any personal or mental defect, for I have, by long experience, found that a plain face conceals, quite frequently, a heart of exquisite sensibility and merit; and the consciousness of any defect makes her awake to the slightest attention or jesting on the subject, more particularly when in the presence of others. Let your wife's laudable pride be indulged, by your showing that you think her an object of importance, and preferable to other women. The most trivial word or act of attention and love from you, gratifies her feelings; and a man never appears to more advantage than in proving to the world his affection and preference for his wife.

Never run on in enthusiastic encomiums on other women in presence of your wife. She does not love you the better for it; it wounds her pride — for women are peculiarly sensitive on this subject. How

much to be condemned is that husband, who prefers other society to that of his wife and family, rambling from place to place, leaving home for the purpose of passing away his time. Does not a faithful and affectionate wife feel mortified and lonely under such an imprudent and improper course as this? Habit, and a want of reflection in such matters have, in many instances, destroyed the happiness of families, and induced the wife, by neglect, to seek and form other associations. Seek then, in the bosom of your family, in the society of your dear children, the purest happiness the world can bestow.

There are men who will sit an entire day with their lips closed, without saying one word of affection to their companion. This is wrong. You should converse freely, be cheerful, gay, and good humored with those dear ones who look to you for happiness and example. And when abroad, do not neglect or avoid your wife, or speak with coldness to her. Few women are insensible to tender treatment; a word, a look, has at times produced upon her offspring sad and melancholy feelings. The austerity of a look, or distance of behavior, will sometimes, through the mind of the mother at a certain period, have a most wonderful effect. A woman's heart is peculiarly formed for tenderness, and every kind word and endearment from the man she loves is flattering and soothing to her feelings.

A husband, whenever he goes from home, should always endeavor to write frequently, and his letters should be warm and affectionate, and on his return home, he should always endeavor to bring some little present to his wife, particularly if she is in a delicate situation. For, in plain language, if you wish an affectionate and devoted child, remember this important instruction; keep her mind calm and free from any melancholy feeling. And remember, in pecuniary matters, do not be penurious and close, or too particular with your wife, for she has an equal right with yourself to all your worldly possessions Besides, really, a woman has innumerable trifling demands, and many little wants which is not necessary for man to be informed of, and which, even if he put himself to the trouble of investigating, he would not understand.

How great then is the responsibility of the husband—to whom Providence has delegated power and influence over such a nature as this? What will his condemnation be who has substituted for so glorious a fabric, a ruin? What should be the penalty for the abuse of so precious a trust? We shrink from its consideration; but on the other hand, turn with renewed satisfaction to the happy consequences of its faithful fulfillment which we attempted to present in the commencement of this important subject. Our readers may ask, what has this subject to do with medicine? I answer, the connection

is plain. Remember, the bark of matrimony is launched on the uncertain ocean of experiment, amid kind wishes and rejoicings; but on that precarious sea are many storms, and even the calm has its perils; only when the bark has weathered these and landed in the haven of domestic peace, can we pronounce the voyage prosperous, and congratulate the adventurer on his or her merited and enviable reward.

Now, in conclusion, let me again impress most deeply on your mind this important truth, that on the serenity, affection, and cheerfulness of your wife's disposition, during her pregnancy, and the peculiar state of mind of both parties during conception, will greatly depend the disposition and peculiarities of the offspring. In relation to this matter, I have had sufficient experience to convince me that mental, as well as physical, organization greatly depend on a vigorous, well-balanced mind, at a certain time, and this is the reason that so many persons in life are so strangely constituted; and let it be remembered that every deviation from the direct path of prudence and foresight in these matters, seriously, if not directly, abridges the chances of a healthy child, possessing sound physical strength, and well balanced mental powers.

THE PLEASURES AND PAINS OF MEMORY.

THE pleasures and pains of memory are so intimately united and blended, that while man enjoys one, he suffers also a degree of the other; hence it has been said that "the memory of joys that are past is sweet and mournful to the soul." Youth is the season of most happiness in life, if that can be termed the greatest happiness which is mingled with the least alloy.

Man, who possesses a sensibility, in some cases increased from early childhood, is capable of experiencing the most exquisite pleasure; but that sensibility also exposes him to feel misery armed with its greatest and most poignant sting; but youth, which is marked with but a small measure of this nice perception, mingles with the scenes around and adapts itself to the ever varying prospect; and if care should at any time seize hold of its employments, its influence on the affections is transient. Hence, it appears, that although man enjoys pleasure in a greater degree than youth, he is also "tremblingly alive" to the impressions of pain, which often may overbalance the sensations of happiness.

It would seem, perhaps, that the agreeable feelings attendant on youth, might be properly classed under the general name of content-

ment; but this is allowed to be merely a calm state of mind; whereas, youth really exults — a much higher and livelier emotion than mere tranquillity.

Man, then, experiences greater pleasure, but suffers also a greater degree of pain. If, however, he patiently bears his disappointment, the sting of misery will become less acute and permanent in its effects, and consequently more happiness will attach to his situation. Let man, therefore, be contented with his lot; although pain be mingled in his pursuits and his delights, yet exquisite pleasure invites him forward.

And what being is there who would not rather seize a higher degree of enjoyment through the medium of anguish, than suffer a torpid existence, marked only by the littleness and weariness of inactivity, and void of the ardent glow of happiness, and the fervor of luxuriant, chaste imagination? Nay, is not this peculiarly appropriated to the state of man, by the dictates of unerring wisdom? Is he not doomed to experience the *pangs* of death? and would such a doom be consistent with the favorite attribute of the *Deity*, Mercy, if no alleviation of distress should be afforded to cheer the gloom of despondency? *That balm is given.* Dissolution of his corporeal frame is but the medium through which inconceivable happiness is brought to his view and offered for his acceptance.

When we trace with the retrospective eye the scenes of past times, memory adds new colors to events, which, at the time, did not strike the mind with so much force and brilliancy. Fancy also lends her aid. A thousand graces rise into form by her power. We tread with reverential awe the ground which, hallowed by affection's eye, contains the ashes of our fathers; or the spot where once was a structure consecrated to devotion; and while imagination is busy in gilding the transactions which memory, or the faithful historic page presents to her notice, the mind is expanded with emotions, and rises superior to the sphere in which it is placed; the fervent glow of devotion enkindles within the bosom, while all the tender sensibilities of our nature fan the flame. These sensations not only soften the soul with a humility honorable to the human character, but animate it to form, and strengthen it to fulfill resolutions excited by the contemplation of the worth and virtues of a long line of ancestry, and a noble desire of imitating their performances. The man, over whom many rolling summers have passed, and whose cheek successive dreary winters have furrowed, is enabled to recall each scene to his mental eye, which is endeared to him by tender remembrances.

In viewing the ruins of a sacred temple, he sees before him the venerable pastor again bending from the pulpit, and feels again the

impressions which he experienced long ago, while the truths that spoke peace dropped from the pastor's lips, like the refreshing rains of heaven on the parched plant; while heavenly wisdom beamed from his face. Again are the events of his early years brought by an association of ideas to his attention. He contemplates them with pleasure; but the sweet delusion quickly vanishes, the vivid colors disappear, he awakes as from a dream. It is really admirable to observe the intimate connection which subsists between the different transactions of the life of any individual, and pleasing to mark attentively that chain, each link of which has naturally drawn on the next, until circumstances not looked for have occurred, and a large superstructure has been created from small trifles, astonishing to all who see it. The wisdom and benevolence of Providence is thus clearly displayed. All the traits of one's character have arisen from minutiæ, which, gradually enlarging and receiving new additions, have formed the *whole*, as the small stream, increased by tributary rills, forms the majestic river, and finally the ocean, on whose bosom commerce expands her wings and wafts her stores to the different nations of the earth! Let any person endeavor to retrace, by the aid of a retentive memory, the scenes of his youth, and occasions for the indulgence of pleasure and wonder will present themselves, incited by noting the progress of his life from one incident to another. He will recollect circumstances which, at the time, were unheeded; but which his present experience proves to have been decisive of his subsequent career, pregnant with misery, or productive of happiness. From these retrospects, arise some of the greatest pleasures we enjoy, but pain as often attends them. The happiness that we experience through life, mostly originates and exists in anticipation.

"Hope springs eternal in the human breast;
Man never *is*, but *always to* BE blest!"

Hence, when we observe the destruction of the evanescent dreams of an indulged and heated imagination, by means which sad, and oftentimes *fatal*, experience affords, then we *regret* that in the moments when the brilliancy of the morning of youth irradiated our minds, and cheered us with favorable prospects, we yielded ourselves up to their control, and heeded not the cause which brought the clouds that now steal over and obscure the noon of manhood, and vail with darkening power those faculties which otherwise would have been bright and vigorous.

Who has not felt the painful memory of youthful follies? Who has not at times found crowding on his recollection, thoughts, feel-

ings, scenes perhaps forgotten by all but him, which force themselves involuntarily upon his attention? Who has not reproached himself with the bitterest regret at follies of thought, speech or act. Time brings no alleviation to these periods of memory; the weaknesses of our youthful days, as well as those of our latter life, come equally unbidden to mock our attention, and claim condemnation from our maturer judgment. It is remarkable that those whom the world least accuses, accuse themselves the most; and that a foolish speech, which, at the time of its utterance was unobserved as such, shall yet remain fixed in the memory of him who made it, with a tenacity which he vainly seeks to have attend more agreeable subjects of reflection. It is remarkable that while our foibles, or our imagined exposure of them to others, furnish frequent subjects of regret, yet we rarely recall to recollection our acts of consideration for the feelings of others. These are not the familiar friends of memory, ready at all times to enter the domicile of the mind unbidden but welcome guests. When they appear, they are summoned usually at the *command* of reason, because of some unexpected ingratitude, or when the mind retires within its council chamber to nerve itself for the endurance or resistance of injustice.

If such be the pain, the penalty of thoughtless folly, who shall describe the penalty of real guilt? Make but the offender better, and he is already severely punished. Memory, that treacherous friend, but faithful monitor, recalls the existence of the past to a mind now imbued with finer feelings, and sterner notions of justice, than when it enacted the deeds thus punished by recollection. If additional knowledge be given us, the consequences of many of our actions appear in a very different light. We become acquainted with many evils they have produced, which, although quite unintentional on our part, are yet sources of painful regret. But this unavailing regret is mixed with another feeling far more distressing. We reproach ourselves with not having sufficiently employed the faculties we possessed in acquiring knowledge, which, if we had attained, would have prevented us from committing acts we now discover to have been injurious to those we best loved.

I hope it will be written on the tablets of your hearts, in characters not to be effaced by ambition, avarice, or pleasure, that the only sure and certain happiness to be found on this side of the grave, is in a consciousness of your own rectitude. All peace and heart-felt joy is the reward of virtue; and there is no applause in this world worth having, unless it is crowned with our own. Happiness is pursued and sought by all who inhabit the earth, yet how few attain it. Happiness, like a deceitful phantom, seems to lure us on by devious

ways through life's short journey, and at last vanishes from our grasp amid the mists that cloud the portals of death. Beyond those clouds is the home of true happiness, and there, not on this earth, can it be enjoyed. At almost every period of human life, worldly happiness is sought under a different form. Gay, joyous youth strives to secure happiness in the train of pleasure, and when riper years show the vanity of such a pursuit, the spirit seeks for peace in other things. Perhaps wealth and luxury are looked to for happiness, but when these are found they bring but empty bitterness, and the soul may in despair exclaim, "Alas! happiness is but a name!"

It may be sought in science, and when earthly wisdom and knowledge have by long study been obtained, it may be but to show the weary student the small value of terrestrial good. Happy are they, who with wisdom from above are instructed how to live so as to secure partial happiness in this life, and full and perfect joy in the life which is to come. May all be so taught, and prepared to enjoy the happiness of heaven. It is religion alone that can soothe and comfort us amidst the storms and trials of life, and amid the blights of affliction remind us of a perpetual summer where the bright sun never retires behind a cloud, where pleasures will last forevermore, and every tear shall be wiped away.

THE DREAD OF DEATH.

IT is estimated that since the appearance of the cholera at Jessore, in British India, in 1817, not less than eighteen millions of the human family have fallen victims to it in India, Asia, Europe, and America, out of which one million have, no doubt, died from the effects of fear. This fact must be apparent to any one, that hundreds die yearly from the effects of the dread of death, and this is the reason why physicians endeavor to restore confidence to their patients. The influence of hope is the great power which, in nine cases in ten, works the cure in every disease. When the curative powers of nature cease, medicine is at an end. It is not sinful to dread death. The Redeemer dreaded it. His human nature, though perfectly holy, shrank back from the agonies of dying. The fear of death, therefore, in itself is not sinful. Christians are often troubled because they have not the calmness in the prospect of death which they suppose they ought to have, and, because their nature shrinks back from the

dying pangs, they suppose that such feelings are inconsistent with religion, and that they who have them can not be true Christians. But they forget their Redeemer and His sorrow; they forget the earnestness with which He plead that the cup might be removed. Death is in itself fearful, and it is a part of our nature to dread it, and even in the best of minds, sometimes, the fear of it is not wholly taken away until the hour comes and God gives them dying grace. There are, probably, two reasons why God made death so fearful to man. One is to impress him with the importance of being prepared for it. Death is to him the entrance to an endless being, and it is an object of God to keep the attention fixed on that, as a most momentous and solemn event. The animals have no immortal nature, no conscience, no responsibility, and no need of making preparations for death; and hence, except in a very slight degree, they seem to have no dread of dying. But not so with man. He has an undying soul. His main business here is to prepare for death and for the world beyond; and hence, by all the fear of the dying pang, and by all the horrors of the grave, God would fix the attention of man on his own death as a most momentous event, and lead him to seek the hope of immortality, which alone can lay the foundation for any proper removal of the fear of dying.

The other reason is to deter man from taking his own life. To keep him from this, he is so made that he starts back from death. He fears it; it is to him an object of deepest dread; and even when pressed down by calamity and sadness, as a general law, he "had rather bear the ills he has, than fly to others he knows not of." Man is the only creature in reference to whom this danger exists. I know of no one of the brute creation, unless it be the scorpion, that will take its own life, and hence they may have no dread of dying. But we know how it is with man weary of life,—goaded by a guilty conscience, disappointed and heart-broken, he is often under strong temptation to commit the dreadful crime of self-murder, and to rush uncalled to the bar of God. As one of the means of deterring from this, God has so made us that we fear to die, and thousands are kept from this enormous crime by fear, when nothing else would save them. It is fortunate, therefore, for the world, that man is afraid to die; and in every pang of the dying struggle, and in every thing about death that makes us turn pale and tremble at its approach, there is in some way the manifestation of goodness to mankind. Then how uncertain is human life. There is but a breath of air and a beat of the heart betwixt this world and the next. In the brief interval of painful and awful suspense, while we feel that death is present with us, we are powerless and He all-powerful; the last faint

pulsation here is but the prelude of endless life hereafter; in the midst of the stunning calamity about to befall us, we feel that earth has no compensating good to mitigate the severity of our loss. But blessed be God, there is no grief without some beneficent provision to soften its intensity. When the good, and the lovely, and those on whom the heart has rested with idolizing fondness die, the memory of their good deeds, like the moonbeams on the stormy sea, lights up our darkened hearts and lends to the surrounding gloom a beauty so sad, so sweet, that we would not, if we could, dispel the darkness that environs them.

It is then that death comes to us in its most welcome form; he borrows the garb of beautiful and gentle sleep, lays down his iron scepter, and his cold hand falls softly on the weary heart, now ceasing to throb, now about to rest from its long, and toilsome, and palpitating efforts, to enter into that glorious home; "to go no more out forever." For the Christian, death has no real terrors; it sets the imprisoned spirit free, closing a toilsome career on earth, and returning the soul to its original and glorious house, to dwell in the presence of its God forever. Not to become familiar with death, is to endure much unnecessary fear, and add to the myriads of the other imaginary woes of human life.

The idea of the intense suffering preceding dissolution is, and has been, so general, that the term agony has been applied to it in many languages. In its origin, the word means nothing more than a violent contest, or strife, but it has been extended so as to embrace the pangs of death, and any violent pains. The agony of death, however, physiologically speaking, instead of being a state of mental and corporeal turmoil and anguish, is one of insensibility. The hurried and labored breathing, the peculiar sound of respiration, and the turned up eyeballs, instead of being evidences of suffering, are now admitted to be signs of the brain having lost all, or almost all, sensibility to impressions. While the brain is possessed of consciousness, the eye is directed as the will commands, by the appropriate voluntary muscles of the organ; but as soon as consciousness is lost, and the will no longer acts, the eyeball is drawn up involuntarily under the upper eyelid.

All the indications of mortal strife are such in appearance only; even the convulsive agitations, occasionally perceived, are of the nature of epileptic spasms, which we know to be produced in total insensibility, and to afford no real evidence of corporeal suffering. An easy death—medically called euthanasia—is what all desire, and fortunately, whatever have been the previous pangs, the closing scene in most ailments is generally of this character. In the beautiful

mythology of the ancients, death was the daughter of night and the sister of sleep.

We think that most persons have been led to regard dying as a much more painful change than it generally is, from the severe struggles at the time of dissolution; but we may remark from experience and a thorough investigation on this subject, that struggles are very far from being invariable signs of distress. Muscular action and consciousness are two distinct things, often existing separately; and we have abundant reason to believe that, in a great proportion of cases, those struggles of a dying man which are so distressing to behold, are as entirely independent of consciousness, as the struggles of a recently decapitated fowl.

A second reason why men are led to regard dying as a very painful change is, because they often endure great pain without dying, and, forgetting that like causes produce like effects only under similar circumstances, they infer that life can not be destroyed without still greater pain. But the pains of death are much less than most persons have been led to believe, and we doubt not that many persons who live to adult age, undergo ten-fold more misery than they would, did they entertain correct views concerning the change. In all cases of dying, the individual suffers no pain after the sensibility of his nervous system is destroyed, which is often without much, and sometimes without any, previous pain.

Those who are struck dead by a stroke of lightning, those who are decapitated with one blow of the axe, and those who are instantly destroyed by a crush, probably experience no pain at all in passing from a state of life to a dead state. One moment's expectation of being thus destroyed far exceeds in misery the pain during the act. Those who faint on having a little blood taken from the arm, or on any other occasion, have already endured all the physical misery they ever would, did they not again revive. Those who die of fevers, and most other diseases, suffer their greatest pain, as a general thing, hours, or even days, before they expire. The sensibility of the nervous system becomes gradually diminished; their pain becomes less and less acute under the same existing cause, and at the moment when their friends think them in the greatest distress, they are more at ease than they have been for many days previous; their disease, as far as respects their feelings, begins to act upon them like an opiate. Indeed, many are already dead for some length of time before their friends are aware of it.

How short and uncertain is life, and what a woeful miscalculation to confine our estimate of joy and felicity to what the present world can impart.

FOODS ONE MAY LIVE UPON FROM CHILDHOOD TO AGE.

AT a month old, or before, there can be no safely fixed time for giving nourishment. In one child digestion may be slow and in another quick or rapid. The active call of the infant is a sign which need not be misunderstood, and none else should be listened to. Overfeeding is the most frequent cause of bowel troubles, colic, irritation of the bowels and diarrhœa. The carminatives so frequently given are required mainly in consequence of errors in feeding the child, or perhaps of the parent, as is well understood.

The modern substitute for the "wet nurse" is the "feeding-bottle," and each needs careful attention. Perfect cleanliness is requisite in the bottle; it should be thoroughly scalded with hot water containing some soda, each time following its use, the bottle, tubes and mouthpiece. For some months milk is all a child requires, and if it can get a sufficiency, nothing else is desirable, but the milk should always be from one cow, and she a healthy one. Sometimes, and for no apparent reason, the milk will disagree; when this is so, the milk of another cow must be had. If the food of a child be artificial, or what is known as "prepared food," requiring no mastication and but little digestion, there is no strength developed in the teeth or jaws, such as comes of eating, what was known to children of earlier days, as a "crust of bread." This comparative disuse of the masticating organs is leading by an inevitable law to their degradation. Disuse of the jaws starves the areas supplied by the maxillary arteries. A hard crust is highly digestible, and is a good thing for a child when it has the teeth with which to gnaw or chew it. Plain, wholesome food is the best. A part of a soft-boiled egg is a good article for using as an introduction to a more completely animal diet. Too much animal food leads to imperfect tissue nutrition, and to mental irritability and peevishness. "The stronger the food the stronger the child" is erroneous. Strong meat is not good for babes. An excellent point will have been gained when a healthy or other child has been trained to eat slowly, so that the starch of the bread eaten shall be thoroughly mixed with the salivary secretions.

Exercise short of absolute fatigue is of the greatest importance to the little folks, and in air that is nearest to entire purity which is within reach. The "velocipede," "perambulator" or "tricycle" may be a ready means for finding fresh air, but its use has not been an unalloyed good. Riding on it cannot fairly be called "exercise." The growing limbs need unrestricted development. This by way of aiding digestion. Good bacon-fat is especially useful to children, and is easily tolerated and

digested by juvenile stomachs. Bread and gravy, or gravy on the potatoes or hominy, and perhaps a small sample of the bacon itself, will readily find a warm welcome from the youngsters. To such as are of delicate stomach and unable to eat fat—it is frequently repulsive to children, and there is doubtless an increasing inability to eat it—the true thing to do is to cut thin slices from the loaf of bread and spread good, fresh butter lightly over the surface, and then double the slice upon itself. This is the genuine style for "company," and will give delicate children the *fat* for their good in *rational* form. "However managed," says *Dr. Fothergill*, in his "*Manual of Dietetics*," "A sufficiency of fat should be supplied to build up healthy tissues. Butter should never be spared. Parents who can afford it, and who do not allow their children a due supply of butter, deserve to pay the surgeon's bills of a later day for operations on joints and scrofulous glands, to say nothing of bills for the treatment of marasmus, tabes mesenterica, hydrocephalus and phthisis, together with the bills for board, etc., at seaside health resorts. Unfortunately, it is just the children who reject fat who most require it."

Probably children get too little good ripe fruit. A liberal amount of it is not only in itself good, but its use protects a child from gorging, when an opportunity offers, on that which is not fit to eat.

Feed a child by regular meals, probably four times a day, but allow no nibbling or eating at *all times*, when it is possible to prevent it. A healthy child need not be tempted to eat; it will be quite ready for meal-time, and generally will eat until filled. Meat in moderate quantity will do good once or possibly twice a day. "Work, play and food in nice proportion, will be found to give satisfactory results."

A child will far more easily abstain from fluids than an adult, but when ill is more likely to be feverish, and so will require more fluids. In illness the measure of its needs for drinks will be shown by its thirst. Home-made lemonade is usually both meat and drink for a child having feverish tendencies, adding, perhaps, slight supplies of milk and lime-water. When convalescence comes on, be very carefully judicious as to kinds and quantities of food, so that there may be neither *starving* nor a *surfeit*. Some are gross and some are dainty feeders. Moderate quantities should be given at frequent intervals in most cases.

Growing, active youngsters, who work hard with brain and muscles, need nourishing food; added to their bread and butter, give them, for breakfast, either beef-steak, mutton, fish, bacon or eggs in fair supply. For dinner at midday, give them such vegetables as are in season, with meat perhaps cold, boiled or baked potatoes, vegetable soup, it may be, and ripe fresh or stewed fruit.

Anæmia is a dearth of red blood-corpuscles, which is not curable merely by furnishing iron to the system, though iron is part of the cure. For

the cure of anæmia, and also for its prevention, good food, containing a fair amount of meat, (and fresh air,) is as essential as iron itself. So, for this one malady, linked with the later years of growth, dietetic management is required as much as medical. Iron for anæmia, phosphorus for brain exhaustion, but both with a sufficiency of food. Excepting from colds, the results of exposure, and contagious diseases, the maladies in youth and growth are the outcome of *insufficient nutrition.* The consequences of overfeeding are much the same as those of underfeeding; because in each case it is a question of defective assimilation.

(*See "Food-Facts for Use," pages* 35-38.)

FOODS FOR ADVANCED LIFE.

THE palate loses its once keen edge, and the skill of the cook is no longer so successful in tickling the palate and the appetite. The teeth fail, too, and the strong meat affording a "good bite," is no longer so readily masticated, nor the steaks or chops so eagerly devoured. Spoon-meat is found to be more acceptable in every way. More condiments are sought, and highly-seasoned dishes find favor for more reasons than one. Flatulence is the bane of advancing years, and for this the cook can do much. On account of their flatulent tendency, old persons are apt to forego the use of vegetables entirely, a very unfortunate error, for it tends to a cachectic or depraved state of the system. At least one or two potatoes, or an equivalent of fresh succulent vegetables, should be eaten each day by one in fair health. The salts of vegetables are good for the blood, and therefore desirable for elderly persons. Where, however, they are found to disagree, these so-called salts may be found in the use of milk, which supplies them, and consequently this forms a large part of the dietary of persons in declining years, just as it forms a large part of food of the young before they can eat vegetables. Should it disagree, or prove too constipating, adopt the plan suggested in what is said in the article on "Food for Delicate Stomachs." The assimilative organs, as years advance, are not equal to great demands upon them. The meals must be moderate in amount and at not too long intervals. Stale bread, not less than a day old, or made into toast and eaten cold, with butter, is far better and safer than hot rolls, muffins or biscuit.

The sharp and well set teeth of youth and manhood may deal with the firm apple, but apples should be baked or stewed for the aged who are not well furnished with masticating apparatus. When cane-sugar is put into fruit by the cook, many persons of middle age and in advanced life suffer from acidity in eating it. To remedy this, mask the acidity of the fruit by using to each pound as much bi-carbonate of soda as will lie on, say, a nickel or a quarter. This leaves the *natural sweetness* due to the levulose sugar of the fruit, and this is quite pronounced enough for elderly palates. Such stewed fruit, with or without cream, should form a

regular staple in the dietary of old age. By keeping these few principles which should guide in the selection of food, well in view, much may be done for the aged in preserving health.

FOODS IN CONVALESCENCE—DURING RECOVERY.

Dr. Tweedie, in his article on Fever, in the "Cyclopædia of Practical Medicine," says that "in the management of convalescence the patient should never be permitted to sit out of bed till the strength be considerably advanced. It is better that restriction should be imposed a little too long than that any risk of relapse should be run, and another point of still greater consequence is the proper regulation of the diet. The convalescent should be strongly impressed with the necessity for guarding against the quantity of food as well as against the quality of it. By far the greater number of cases of relapse arise from indiscretion in diet, especially when, in the progress of fever, there has been gastric irritation. The stomach may be able to digest and assimilate a limited portion of food, but an extra ounce or two may induce oppression and a renewal of the fever." All sick and weak persons are dyspeptics, and must be fed accordingly.

"Small quantities of milk and seltzer water, of whole beef-tea, of meat infusions with soluble carbo-hydrates," says Fothergill, "should be given at frequent intervals." He also says that "great care should be taken not to raise the patient up abruptly in order to be fed. The heart structure is largely disorganized, and a great many of the muscular bundles are reduced to a mass of *débris*, so that the heart wall is weak, and in raising the patient to an upright position suddenly, the weight of the blood column in the head and neck is thrown abruptly upon the heart. The left ventricle is unable to bear the weight, and comes to a standstill in diastole—flaccid and distended with blood. Even when the patient has recovered so as to walk about the room, this danger of heart failure may not have fully passed. After the high pyrexia of relapsing, or famine fever, it is not unusual for a patient to drop suddenly to rise no more—the weakened heart having stopped abruptly."

In the convalescent, the appetite for food steadily increases and must be met. Small quantities of milk puddings of very digestible character, such as are made of broken biscuit or crumbled stale bread, may be given; perhaps some well-boiled corn mush, or, indeed, any farinaceous material which has been exposed to a high heat. Milk or cream with cold coffee forms an excellent nutritive beverage. Often thirst lingers, and this calls for beverages which may readily have a food value given to them by adding some baked cereal which may be grated in. Gruel made with baked flour or baked oatmeal is good. Milk or lactated foods can be used, perhaps flavored with a pure article of native or California wine. Lemon juice is a pleasant acid and assuages thirst.

Blanc-manges suggest themselves, but should not be made of raw or uncooked starch. To forget this is to run the risk of filling the stomach, still enfeebled, with undigested starch, the most effectual means of upsetting it that could well be devised.

TO YOUNG MEN.

WHAT will my reader give to know how to get rich? Now, I will not vouch that the following rules will enable every person who may read them to acquire wealth, but this I will answer for, that if ever a man does grow rich by honest means, and retains his wealth for any length of time, he must practice upon the principles laid down in the following essay; and I strongly commend them to the attention of every *young* man, at least, as affording the true secret of success in attaining wealth. A single perusal of such an essay, at an impressible moment, has sometimes a very wonderful effect upon the disposition and character of youth.

Although wealth often appears the result of mere accident, or a fortunate occurrence of favorable circumstances, without any exertion of skill or foresight, yet every man of sound health and unimpaired mind may become wealthy, if he takes the proper steps.

Foremost in the list of requisites are honesty and strict integrity in every transaction of life. Let a man have the reputation of being fair and upright in his dealings, and he will possess the confidence of all who know him. Without these qualities, every other merit will prove unavailing. Ask concerning a man, "Is he active and capable?" "Yes." "Industrious, temperate, and regular in his habits?" "O, yes." "Is he honest? is he trustworthy?" "Why, as to that, I am sorry to say that he is not to be trusted; he wants watching; he is a little tricky, and will take an undue advantage, if he can." "Then I will have nothing to do with him," will be the invariable reply. Why, then, is honesty the best policy? Because without it you will get a bad name, and everybody will shun you.

A character for knavery will prove an insurmountable obstacle to success in almost every undertaking. It will be found that the straight line is, in business, as in geometry, the shortest. In a word, it is almost impossible for a dishonest man to acquire wealth by a regular process of business, because he is shunned as a depredator upon society.

Needy men are apt to deviate from the rule of integrity, under the plea that necessity knows no law; they might as well add, that it knows no shame. The course is suicidal, and by destroying all confidence, ever keeps them immured in poverty, although they may possess every other quality of success in the world.

Punctuality, which is said to be the soul of business, is another important element of money-getting. The man known to be scrupulously exact in the fulfillment of his engagements, gains the confi-

dence of all, and may command all the means he can use to advantage; whereas, a man careless and regardless of his promises in money matters, will have every purse closed against him. Therefore, be prompt in your payments.

Next, let us consider the advantages of a cautious circumspection in our intercourse with the world. Slowness of belief, and a proper distrust are essential to success. The credulous and confiding are ever the dupes of knaves and impostors. Ask those who have lost their property how it happened, and you will find in most cases it has been owing to misplaced confidence. One has lost by endorsing, another by crediting; another by false representations; all of which a little more foresight and a little more distrust would have prevented. Judge of men by what they do, not by what they say. Believe in works rather than words. Observe all their movements. Ascertain their motives and their ends. Notice what they say and do in their unguarded moments, when under the influence of excitement. The passions have been compared to tortures, which force men to reveal their secrets. Before trusting a man, before putting it in his power to cause you a loss, possess yourself of every available information relative to him. Learn his history, his habits, inclinations and propensities; his reputation for honesty, industry, frugality, and punctuality; his prospects, resources, supports, advantages, and disadvantages; his intentions and motives of action; who are his friends and enemies, and what are his good or bad qualities. You may learn a man's good qualities and advantages from his friends — his bad qualities and disadvantages from his enemies. Make due allowance for exaggeration in both. Finally, examine carefully before engaging in any thing, and act with energy afterward.

Order and system in the management of business must not be neglected. Nothing contributes more to despatch. Have a place for every thing, and every thing in its place; a time for every thing, and every thing in its time. Do first what presses most, and having determined what is to be done, and how it is to be done, lose no time in doing it. Without this method, all is hurry and confusion, little or nothing is accomplished, and business is attended to with neither pleasure nor profit. Remember, in life, honey catches flies, vinegar never.

A polite, affable deportment is recommended. Agreeable manners contribute powerfully to a man's success. Take two men possessing equal advantages in every other respect, but let one be gentlemanly, kind, obliging, and conciliating in his manners; the other harsh, rude, and disobliging, and the one will become rich where the other will starve.

We are now to consider a very important principle in the business of money-getting, namely, — *Industry* — Persevering, indefatigable attention to business. Persevering diligence is the philosopher's stone which turns every thing to gold. Constant, regular, habitual, and systematic application to business must, in time, if properly directed, produce great results. It must lead to wealth, with the same certainty that poverty follows in the train of idleness, inattention, vice, drinking, and gambling. It has been truly remarked, that he who follows these things instead of his business, will soon have no business to follow.

The art of money-saving is an important part of money-getting. Without frugality no one can become rich; with it few would be poor. Those who consume as fast as they produce, are on the road to ruin. As most of the poverty we meet with grows out of idleness and extravagance, so most large fortunes have been the result of habitual industry and frugality. The practice of economy is as necessary in the expenditure of time, as of money. They say, that if "we take care of the pence, the pounds will take care of themselves." So, if we take care of the minutes, the days will take care of themselves.

The acquisition of wealth demands as much self-denial, and as many sacrifices of present gratification, as the practice of virtue itself. Vice and poverty proceed, in some degree, from the same sources, namely — the disposition to sacrifice the future to the present; the inability to forego a small present pleasure for great future advantages. Men fail of fortune in this world, as they fail of happiness in the world to come; simply, because they are unwilling to deny themselves momentary enjoyments for the sake of permanent future happiness.

Every large city is filled with persons, who, in order to support the appearance of wealth, constantly live beyond their income, and make up the deficiency by contracting debts which are never paid. Others there are, the mere drones in society, who pass their days in idleness, and subsist by pirating on the hives of the industrious. Many who run a short-lived career of splendid beggary could they but be persuaded to adopt a system of rigid economy for a few years, might pass the remainder of their days in affluence, and, if not in affluence, have a sufficiency provided for the winter of old age, or for their families, should they be called off by death. But no! They must keep up *appearances*, they must live like other folks. Their debts accumulate; their credit fails; they are harassed by duns, and besieged by constables and sheriffs. In this extremity, as a last resort, they often submit to a shameful dependence, or engage in

criminal practices, which entail hopeless wretchedness and infamy on themselves and families.

Stick to the business in which you are regularly employed. Let speculators make their thousands in a year or a day; mind your own regular trade, never turn to the right hand or the left. If you are a merchant, a professional man, or a mechanic, never buy lots or stocks, unless you have surplus money which you wish to invest. Your own business you understand as well as other men; but other people's business you do not understand. Let your business be some one which is useful to the community. All such occupations possess the elements of profit in themselves.

People seldom learn economy till they have but little left to exercise it on. Be saving, not stingy nor prodigal. We never knew a prudent, economical, saving man to come to want, but we have known hundreds of individuals born to wealth, who, by extravagance, have died in want and misery.

Youth is ever impatient. How many fair prospects, at the outset of life have been spoiled or blasted by the anxious and impatient mind! Dissatisfied with the at first toilsome and rugged track, we seek to find some short-cut to fortune, and only become conscious of our error when foundering among the difficulties, embarrassments, and perplexities of a business plunged into imprudently, and thoughtlessly, to wander back, and again set forth, far behind those we so ardently hoped to outstrip, in the pursuit of wealth and happiness. How often are the minds of the young dazzled, and blinded, and led on to ruin by the splendid fallacies of some plausible visionary, who will tell you of the stupendous fortunes made in a day, "of a tide in the affairs of men!" alas! how few float to fortune on the flood of that tide — one in a thousand!

Let it be deeply impressed on your mind, how perilous is falsehood, when once concealment or deceit has been practiced in matters where all should be fair and open as the day; confidence can never be restored, any more than you can restore the white bloom to the grape or plum which you have pressed in your hand. How true is this, and what a neglected truth.

How much misery would have been avoided in the history of many lives, had truth and sincerity been controlling habits, instead of prevarication and deceit? Once we deceive it is almost impossible to restore confidence. How many young men's hopes have been crushed by one false step! With partners in trade, with partners in life, with friends, employers, and with all by whom we are confided in, how essential that all guile and hyprocrisy should be guarded against.

HOW TO PRESERVE HEALTH.

OF HEALTH.

THE four ordinary secrets of health are early-rising, exercise, personal cleanliness, produced by using cold bath every morning, and rising from the table with the stomach unoppressed.

A healthy mind in a healthy body was esteemed, by the ancients, the greatest blessing. This truth being proclaimed so long ago, is it not strange that we have not better learned before this time to secure, by all pains and care, the healthy body? Perhaps you are a little sceptical. You do not believe that the powers of your mind, the evenness of your temper, and the kindness of your disposition, depend in any sense on the state of your body. I appeal then to your own observation and experience. Providence has put into your own hands the means of health. It was too precious a boon to be trusted to any one's keeping but your own; and remember that the gift involves a solemn responsibility. Health will be counted among those talents for the use of which you are to answer to God. It is then surely one of your greatest blessings, and one of your first duties is to study the laws that govern it — this is *physical education.* It is a solemn truth, and one, my young friends, that should be familiar to you, that, *for the most part*, we bring the diseases we suffer upon ourselves. If not the effect of our own sin or imprudence, they are traceable to the neglect or ignorance of the guardians of our youth, or probably entailed on us by our parents. They perhaps received them from their parents, and they and we suffer for the violation of the laws of our being.

Take for example, a young girl, bred delicately in town, shut up in a nursery in her childhood, in a boarding-school through her youth, never accustomed either to air or exercise, two things which the law of God makes essential to health. She marries; her strength is inadequate to the demands upon it; her beauty fades early; she languishes through the hard offices of giving birth to children, suckling, and watching over them, and dies early; and her acquaintances lamentingly exclaim, "What a strange Providence, that a mother

should be taken in the midst of life from her children!" Was it Providence? No! Providence had assigned her three-score years and ten; a term long enough to rear her children and see her children's children; but she did not obey the laws on which life depends, and of course she lost it.

A father, too, is cut off in the midst of his days. He is a useful and distinguished citizen, and eminent in his profession. A general buzz rises on every side of "What a striking Providence!" This man has been in the habit of studying half the night; of passing his days in his office, and in the courts, of eating luxurious dinners, and drinking various liquors. He has every day violated the laws on which health depends. Did Providence cut him off? The evil rarely ends here. The diseases of the father are often transmitted, and a feeble mother rarely leaves behind her vigorous children.

It has been customary, in some of our cities, for young ladies to walk in thin shoes and delicate stockings in mid-winter. A healthy, blooming, young girl thus dressed in violation of heaven's laws, pays the penalty; a checked perspiration, cold, fever, and death. "What a sad Providence!" exclaim her friends. Was it Providence, or her own or parents' folly?

A beautiful, young bride goes, night after night, to parties, made in honor of her marriage. She has a slightly sore throat, perhaps, and the weather is inclement, but she must wear her neck and arms bare, for who ever saw a bride in a close evening dress? She is seized with inflammation of the lungs, and dies before her bridal days are over. Why? From a checked circulation, cold, fever, or consumption.

Night after night, we see beautiful girls, and, not unfrequently, women who ought to have better sense, from vanity, go thinly dressed, coming out of a warm room into inclement weather, with neck and arms bare, clothed in a thin muslin or fancy dress. Who can expect any thing else from such a course of conduct, but sore throat, inflammation of the lungs, pleurisy, rheumatism, and a variety of other diseases, which suddenly destroy life, or injure the genera. health, so as to make life a burden? And now let me urge upon you the importance of these things, for I feel assured, from long experience, that if we would but study the laws upon which health depends, and faithfully follow them, there would be an end to many modern diseases, as well as those entailed from generation to generation; for the great mass of disease is mostly incurred by intemperance in eating or drinking, by neglect of regular exercise, and by our own imprudence. Therefore, if you would have good health, study

the laws of nature, and doctors may close their shops, and apothecaries swallow their own drugs for want of customers.

It is a fact, to which physicians will testify, that half the females, in what are called the better classes, are victims to ill-health. Take the daily life of the wives and daughters of our men of wealth, and see what it is! From morning to night the same round of nothingness, the same comparative absence of physical exercise and mental recreation, the same listless, sluggish, stagnating existence. With plenty of servants to render all manual labor, and frequently even household cares unnecessary; often, if wives, with no offspring to engage the attention, or if daughters, with no particular object in life to awaken interest, they pass day after day without any physical exercise more invigorating than a stupid walk up and down the street, and with no mental employment more inspiring than the reading of a few indifferent novels, the making idle morning calls, or the spending an evening at a ball, where late hours, thin dresses, excessive dancing, and improper food do more injury than they imagine.

Now, did nature ever intend woman, even if rich, to live thus? Is not wealth, when it leads to such habits, a curse rather than a blessing? There is nothing more true than that a certain amount of both mental and manual labor is necessary, in the case of either sex, to the enjoyment of continued health. If a rich man follows no employment, he becomes a drunkard, a gambler, or worse, for he can not do without action, he feels the evil of unemployed energies; yet few appear to consider that females, equally with males, should have something to do, something to interest and occupy their energies. Women who fill a moderate station, in other words are compelled by necessity to work, without having to overwork themselves, almost invariably enjoy good health; and when they do not, their maladies may be traced generally to some constitutional infirmity transmitted from their parents, as consumption, debility, dyspepsia, or other hereditary complaints. Farmers' wives, as a mass, are more healthy than the wives of citizens; and why? Because, first as farmers' daughters, and afterward as their helpmates, they are accustomed to a certain amount of invigorating exercise, which females born and bred in towns consider, to use their own words, ungenteel. Yet, the first gain from nature the blooming cheeks, which the latter, too frequently, are compelled to imitate. English women, as a class, are less sickly than American ones — why? Because English girls take daily a certain amount of robust out-of-door exercise, which American mothers, with their overstrained and false notions, would pronounce unfeminine, but which gives vigor to the frame, health to the blood, and, what is best of all, elasticity to the spirits.

Females should be early taught the important fact, that beauty can not in reality be independent of health, and that the one is absolutely unattainable by any practice inconsistent with the other. In vain do they hope to improve their skin — to give a "roseate hue" to their cheeks, or to augment the grace and symmetry of their forms, unless they are cautious to preserve the whole frame in health, vigor, and activity. Beauty of complexion, and, to a certain extent, that of shape also, is nothing more than visible health — a pure mirror of the perfect performance of the internal functions, and of their harmony with the external portions of the system; the certain effects of pure air, cheerfulness, temperance, and of exercise, uninterrupted by any species of unnatural restraint.

In the great work of Dr. Metcalfe, on the subject of caloric, he lays down the proposition that nothing more essentially contributes to health and longevity than a happy and tranquil state of mind, which is to be sought for in a temperate exercise of all the physical, intellectual, and moral faculties. "Benevolence, friendship, love, a good conscience, with tender, refined, and elevated thoughts, are never-failing sources of health and delight; whereas, pride, envy, jealousy, covetousness, anger, and all the passions, habitually indulged to excess, not only embitter our happiness, and that of all around us, but sap the foundation of health, and shorten the period of existence."

"*What is health?*" is a question which may be thought quite superfluous to ask, yet, like some words which we suppose we know the meaning of, because they are familiar, and yet in fact convey no idea to the mind, so it will be found that health, which every one talks of, is, after all, a thing which very few have any correct idea of. I define it to be a condition of mind and body habitually susceptible of agreeable impressions, which, therefore, requires sensibility of the internal senses and of the interior nervous structure; cultivation or discipline of these senses and of the faculties of mind, that we may be furnished with agreeable impressions from all external objects, and equally pleasing consciousness in the exercise of thought upon the subjects thus presented. This, indeed, is an ideal of health which may be the lot of few; but it is proper to have a standard. It does not require as a condition of health great intellectual refinement; but it does require, what all should aim at, and, by proper advice and direction, may be attained by all, a proper exercise of the functions of mind and body. Harmony of all the faculties, when these are properly disciplined, is the true state of happiness. Disease impairs enjoyment; that is, of a placid or habitual character, or that which is most consistent with long life, but may, by rousing

into greater activity certain powers of mind or body, give to them more acute sensibility.

"Another requisite is, that this sensibility of nerves should be natural and not morbid. A bodily constitution that is 'servile to every skyey influence,' and suffers a shock from even ordinary incidents of life, is devoted to the extremest human misery, and often ends in the unuttered woes of madness." Every person ought to have physical exercise in the open air, that will occupy two or three hours every day. We work too hard, but it is not labor of the right kind. The excessive toil in the office, in the shop, the store, the counting-room, in the kitchen, the sewing-room, and in the school-room should be deprecated, and invigorating exercise in the open air encouraged.

City life, especially in the mercantile classes, oppressed by the cares of business in addition to the claims of society, is also characterized by an unnatural excitement and activity. The unremitted cares of business, the rage of passions, the fury of politics, the restlessness of ambition, the thirst for gold, the struggles of competition, overtax the physical, intellectual, and moral constitution, and doom it to the depressive horrors and enfeebled state of reaction, and fast wear out human life.

In enumerating the improvements that have taken place in cities, as regards the health of their inhabitants, we must not omit the railroads. Some of my readers may be disposed to ask, in astonishment, what railroads have to do with health? I answer, that the facilities which railroads afford for enjoying the fresh air of the country, have a direct influence upon health of a most beneficial nature. Dr. James Johnson, in the *Medico Chirurgical Review*, has the following remarks on the subject:

"Railroad travelling possesses many peculiarities, as well as advantages over the common modes of conveyance. The velocity with which the train moves through the air is very refreshing, even in the hottest weather, where the run is for some miles. The vibratory, or rather oscillatory, motion communicated to the human frame is very different from the swinging and jolting motions of the stage-coach, and is productive of more salutary effects. It equalizes the circulation, promotes digestion, tranquillizes the nerves (after the open country is gained), and often causes sound sleep during the succeeding night; the exercise of this kind of travelling being unaccompanied by that lassitude, aching, and fatigue, which, in weakly constitutions, prevents the nightly repose. The railroad bids fair to be a powerful remedial agent in many ailments to which metropolitan and civic inhabitants are subject."

The innumerable steamboats plying upon rivers are another com-

paratively recent means of securing health to metropolitans. The benefits derived from a trip for thirty miles upon a river, on a fine summer's day, are very great. The lively bustle of the river, the beautiful scenery, the swift motion of the vessel through the water, all tend powerfully to alienate for a time the mind of the business-pressed citizen from his daily thoughts; and the refreshing breeze which is almost always blowing, has a most healthful effect. It is remarkable that so little attention is paid to the preservation of health, at least while health remains, when only is its preservation possible.

Pleasure-seekers continually commit excesses which shorten life; men ambitious of wealth or fame, task the brain beyond its capacity; persons otherwise of sense and prudence, indulge in dishes that experience proves to be unsuited to them, or gorge themselves over otherwise healthy food; proper bathing is neglected; people, when fatigued, throw themselves down in a current of air to sleep, though perfectly aware that, in the relaxation that ensues, the draught will give them cold. Slight affections of the throat and lungs are disregarded, until the evil becomes serious, perhaps incurable. Exercise is neglected by persons of sedentary employments. Nervous individuals, instead of avoiding, seek excitements. Farmers inhabiting marshy districts overlook every consideration of prudence, and thus sacrifice themselves to slow agues, or violent fevers. In short, the laws of physical existence are violated in every way, and only when the long series of follies begins to tell on the constitution, is attention directed to the subject. Then the sufferer thinks of health; but, alas! too late. The vitality is gone; the victim becomes a sufferer for a few short years, and life is prematurely cut off.

This neglect of the laws of our physical being can not be too much reprehended. Many a man, through ignorance or neglect of these laws, has shortened his life materially, besides leaving impaired constitutions to his children. Persons, indeed, who might have lived to seventy, or even an hundred years, cut themselves off at fifty or sixty; while others, with still more disregard to this matter, wear out their lives at forty, or even earlier. From excesses, carelessness, and improper habits, how many thousands shorten the duration of life? If we would study the laws of the prophet, "the three-score and ten" of the Hebrew time would be more frequently attained. Half the medicines used in endeavoring to prolong life would be avoided, and all would be familiar with the simple rules of prolonging life. Imprudence would then be comparatively little known. Excesses of body or mind, except among the wicked or reckless, would disappear. A healthy, robust, and happy race would fill our country; the curse

of hereditary disease would almost vanish, and man, as in the primeval Paradise, would stand up in the perfect image of his Maker.

If men and women gave three times as much attention as they now do to ventilation, or, in plain language, breathing fresh air, bathing regularly, and exercise in the open air, and only one-third as much to eating, fashion, and late hours, the number of doctors, dentists, and apothecaries, and the amount of neuralgia, dyspepsia, gout, rheumatism, diseases of the womb, consumption, and many other diseases would be changed in a corresponding ratio; mankind would rapidly present the aspect, not only of a far healthier and thriftier, but a far more beautiful and more virtuous race.

EARLY RISING.

EVERY circumstance contributes to render early rising advisable to those who are in pursuit of health, or those who desire the enjoyment of it. There is no time equal in beauty and freshness to the morning, when nature has just parted with the gloomy mantle which night had flung over her, and stands before us like a young bride, from whose face the vail which covered her loveliness has been withdrawn. The whole material world has a vivifying appearance. The husbandman is up at his labor, the forest leaves sparkle with drops of crystal dew, the flowers raise their rejoicing heads toward the sun, the birds pour forth their anthems of gladness, and the wide face of nature itself seems as if awakened and refreshed by a mighty slumber. All these things, however, are hid from the eyes of a sluggard; nature in her most glorious aspect is to him a sealed book, and while every scene around him is full of beauty, interest, and animation, he alone is passionless and uninspired. Behold him stretched upon his couch of rest. In vain does the cock proclaim that the reign of day has commenced. In vain does the morning light stream fiercely through his window, as if to startle him from his repose. He hears not, he sees not, for blindness and deafness rule him with desperate sway, and lay a deadening spell upon his faculties, and when he does at length awake, far on in the day, from the torpor of this benumbing sleep, he is not refreshed. He does not start at once into new life, with joy in his mind and vigor in his frame. On the contrary, he is dead, languid, and stupid, as if half recovered from a paroxysm of drunkenness. He yawns, stretches himself, and stalks into the breakfast room, to partake, without appetite, of his unre-

freshing meal, while his eyes are red and his physical system relaxed, and his mental faculties weakened by thus wasting the most precious hours of his existence in secondary death. There is a freshness, a purity in early morning, which, to the physical and moral man, is restorative and delightful. It is seldom that the rich and fashionable of the world taste its ethereal joys. Its mystical spirit drinks in the perfumed breath of awakened creation, which is almost gifted with supernatural power. Those who would live long and see happy days, with sound health, must habitually be early risers. The difference between rising every morning at six and eight, in the course of forty years, amounts to twenty-nine thousand and two hundred hours; or three years, one hundred and twenty-one days and sixteen hours. The loss of the morning hour is never retrieved. The great utility of bodily exercise in the morning, as a preservative of health, is of the utmost importance. Walking is the most perfect exercise for the human body. Every artery, from the heart to the extremities, propels the blood quicker and more equally in walking than in any other exercise. The blood is drawn from the head and upper parts, where it is most slow and languid, and is circulated with rapidity to every extremity of the system. Almost all the great and laborious men in the world have been early risers. An hour lost in bed in the morning, is far more injurious than the time lost in the evening. Industrious men do not feel the need of as much sleep as idlers. The reason is, they acquire the habit of taking less sleep, and then they are as well off, and better, than those who sleep more. One hour lost in sleep is forever lost, without bestowing any benefit upon the loser.

The man who sleeps away this hour feels dull when he does rise. He has no system, and not having much industry, may well think it dangerous to have many irons in the fire. He lets his iron burn till little is left but the handle.

The world is but little better for such a man while he is in it, and he will be but little thought of when he is out of it. Industry and system are the two great means to accomplish wonders, both as to health and wealth. Put all the irons into the fire, and then see that none of them burn.

Those who desire to attain to a great age, or to really and truly enjoy life, must maintain habits of temperance, and have free exercise in the open air. Live on plain diet. Be sure you observe cleanliness, by which I mean using freely the bath, cold or warm, according to the season or the constitution of the person. Avoid a bent or crooked position of the body, rise early, and especially cultivate a contented and cheerful frame of mind. The history of many of the ancient

philosophers who lived to comparatively a great age, by a simple or abstemious regimen and regular habits of exercise, bathing, etc. affords a lesson by which we ought to profit much. In nearly every case of longevity on record, it will be seen that equanimity of temper, a uniform, calm, regulated exercise of all the animal passions, only to be maintained by placing them under the control of the moral sentiments, and direction of the intellectual faculties, was prominently among the causes of longevity. Intensive and extended life, in fact, are incompatible. Any passions or powers of mind or body, that are often and inordinately excited, will soon exhaust vitality, and, on the contrary, any mental or bodily functions not duly exercised, will be improperly developed.

Our whole lives should be a state of moderate, yet constant, enjoyment. It is in our power so to live as to possess an almost entire immunity from disease, and death ought to be the sequel of old age — a gradual, almost insensible cessation of the functions of life, unattended with pain and suffering, instead of the violent and unnatural termination of existence, from disease, as is now generally the case. Every motion of the human frame helps to construct a fortification against disease, and to render the body more impregnable against attacks. The man who is obliged to be constantly employed to earn the necessaries of life and support his family, knows not the unhappiness he prays for when he desires wealth and idleness. To be constantly busy is to be generally happy. Persons who have suddenly acquired wealth, broken up their active pursuits, and begun to live at their ease, waste away and die in a very short time. Thousands would have been blessings to the world, and added to the common stock of happiness, if they had been content to remain in an humble sphere, and earned every mouthful of food that nourished their bodies. But no! Fashion and wealth took possession of them, and they were completely ruined. They ran away from peace and pleasure, and embraced idleness, dissipation, intemperance, and a lingering death. Ye who are sighing for the pomp and splendor of life, beware! Ye know not what ye wish! How is it possible for you to be happy, while you possess a discontented mind? No situation, however exalted — no wealth, however magnified — no honors, however glorious — can yield you solid enjoyment, while discontent lurks in your bosom. The great secret of health and happiness consists in being reconciled to your lot, and never sighing for the splendor of riches, or the magnificence of fashion or power. Persons who are constantly employed, and go cheerfully to their daily task, are the most happy, and at night sleep with perfect composure; while the rich, the idle, and dissipated, are seldom contented; the springs of

life are rusting out, the functions of life perform their duty slug gishly, the health becomes impaired, the constitution gradually sinks, dissipation rapidly wastes the energies of nature, and premature old age is the consequence, or at least general ill-heath, and relief through medicine is sought in vain.

Early rising has been often extolled, and extolled in vain; for people think that an hour's additional sleep is very comfortable, and can make very little difference after all. But an hour gained o) wasted every day makes a great difference in the length of our lives, which we may see by a very simple calculation. First, we will say that the average of mankind spend sixteen hours of every twenty-four awake and employed, and eight in bed. Now, each year having three hundred and sixty-five days, if a diligent person abstract from sleep one hour daily, he lengthens his year three hundred and sixty-five hours, or twenty-three days of sixteen hours each, the length of a *waking* day, which is what we call a day in these calculations. We will take a period of forty years, and see how it may be decreased or added to by sloth or energy. A person sleeping eight hours a day, has his full average of three hundred and sixty-five days in the year, and may, therefore, be said to enjoy complete his forty years. Let him take nine hours sleep, and his year has but three hundred and forty-two days, so that he lives only thirty-seven and one-half years; with ten hours in bed, he has three hundred and nineteen days, and his life is thirty-five years; in like manner, if the sleep is limited to seven hours, our year has three hundred and eighty-eight days, and, instead of forty, we live forty-two and one-half years; and if six hours is our allowance of slumber, we have four hundred and eleven days in the year, and live forty-five years. By this, we see that in forty years, two hours daily occasion either a loss or gain of *five years*. How much might be done in this space! What would we not give at the close of life for another lease of five years? And how bitter the reflection would be at such a time, if we reflected at all, that we have wilfully given up this portion of our existence, merely that we might lie a little longer in bed in the morning.

A ride of half a dozen miles before breakfast lends a bloom to the cheek and a sparkle to the eye of beauty, which no cosmetic can supply, to say nothing of the famous appetite that follows in their train.

At least two hours a day should be spent in the open air. When the weather is such as not to permit the delicate to go abroad, the windows should be thrown open, and exercise then taken by walking up and down the apartments of the house. Walking is the most natural and convenient exercise. and, to the healthy and robust, per-

haps the best. Riding on horseback, especially to the dyspeptic, and to those who are threatened with consumptive complaints, and to weakly persons, will be of great service. I have restored hundreds to perfect health by exercise on horseback, by morning and evening rides, when medicine has failed.

SLEEP.

NATURE has allotted the darkness of night for repose, and the restoration, by sleep, of the exhausted energies of both body and mind. If study or composition be ardently engaged in toward that period, the increased action of the brain, which always accompanies mental labor, requires a long time to subside, and if the individual be of an irritable habit, or nervous temperament, he will be sleepless for hours, or tormented by unpleasant dreams. By continuing to sit up late at night, occupying the mind too intensely by study or otherwise, one must ultimately produce a state of irritability of the nervous system approaching to insanity. Nothing destroys health so rapidly as the want of refreshing sleep. It is, therefore, of great advantage to engage in studies or labor early in the day, and devote two or three hours preceding bed time to music, or amusing and pleasant conversation, or any thing which produces a cheerful mind.

Sleep is a necessary law of the animal economy, and is the suspension of animal life. During its continuance, the creature is under the influence of organic life alone. Organic life applies to the functions which sustain and nourish the object; animal life to those which make it a sentient being, which give it thought, feeling, and motion, and bring it into communication with the surrounding world. The digestive organs, the kidneys, the heart, and the lungs, are the apparatus, which carry into effect the organic life of animals. Those which manifest animal life are the brain, the organs of the senses, and the voluntary powers. Sleep is the intermediate state between wakefulness and death—wakefulness being regarded as the active state of all the animal and intellectual functions, and death their total suspension. Complete sleep is a temporary intellectual death, though not an organic one—the heart and lungs performing their offices with their accustomed regularity, under the control of the involuntary muscles. This is the sleep of health, and is full of tranquillity and repose, by which nature recruits the wasted powers, and restores our nervous energies. When this is accomplished, slumber vanishes, languor is

succeeded by strength, and all of the faculties, mental and corporeal, are recruited. In this delightful repose man assimilates that state in which Adam sprang from his Creator's hand, fresh, bouyant, and vigorous, rejoicing as a man ready to run his course; his mind and body prepared for exertion. How different is the sleep of disease? It is short, restless, feverish, and unrefreshing, disturbed by frightful or melancholy dreams; the pulse is agitated, and from nervous excitements there are frequent startings and tremblings of the muscles; nightmare, with its thousand shapes, presses like an incarnation of misery upon the frame; imagination, distempered by its combination with physical disorder, ranges along the gloomy confines of terror, holding communication with demons and the grave, and throwing hideous shadows over human life, from which they awake with palpitating hearts, and in a state of suffocation.

Night is the time for sleep. Darkness and the silence of nature court repose, as the light of the new-born day invites us to activity and labor. In fact, there exists a strange but certain sympathy between the periods of day and night, and the performance of particular functions during these periods, that is not the mere effect of custom. All nature awakes with the rising sun. The birds begin to sing; the bees to fly about with murmurous delight; the flowers, which close under the embrace of darkness, unfold themselves with renewed beauty to the light—for plants sleep as well as animals; the cattle arise to crop the dewy herbage, and man goes forth to his labor until the evening. At the close of day, the instinctive nature of animals shows the reverse of all this activity and motion. The songs of the birds, one after another, become hushed, till at length all is silence, and nature is left to sleep amid the falling dews; action is succeeded by listlessness, energy by languor, the desire for exertion by the inclination for repose, and sleep, with her leaden scepter, holds her dominion over the world.

Now, the sensorial powers being sufficiently exhausted, we naturally fall asleep. As the exhaustion is a gradual process, so is that of slumber. The senses gradually become unconscious of impressions, and, one after another, part with sensation—the sight first, then taste, smell, hearing, and last touch, or feeling, all in regular order. The brain does not all at once glide into repose, its different organs being successively thrown into this state—one dropping asleep, then another, then a third, till the whole are locked in the fetters of slumber. The ordinary exertions of man run down the circulation every day of his life; and the first law of his nature, by which God (who is not only the giver, but also the preserver and sustainer of his life) prevents him from destroying himself, by this change of day and night, necessary

for the renewal of his strength, so that repose may succeed action. The sweetness of labor is only equalled by the sweetness of rest; and when they harmonize together, the influence is alike beneficial to mind and body. The night succeeds the day, and the day succeeds the night, in harmonious order, while the day of rest closes the week. The former affording repose to the body, the latter to the soul. Night is the proper period for sleep.

Many facts can be related, which satisfactorily prove the advantages of sleeping during the night instead of the day. An experiment was made by two colonels of horse in the French army, who had disputed much which period of the twenty-four hours was the fittest for marching and for repose. As this was a very interesting subject to settle, in a military point of view, they obtained leave from the commanding officer to try the experiment. One of them, although it was in the heat of summer, marched in the day, and rested at night; he arrived at the termination of a march of six hundred miles, without the loss of either man or horse. The other, who conceived it would be less fatiguing to march during the cool of the evening and part of the night than in the heat of the day, at the end of the same march, had lost a great many of his horses and men, and much sickness prevailed among his troops. This experiment was also made with our army in Mexico, to avoid the intense heat of the day, and resulted in the same manner.

There is a distressing condition of the system marked by an inability to sleep, when, through the dreary watches of the stillest night, repose is solicited in vain, and the individual rises in the morning, even more exhausted than when retiring the preceding evening, hoping to rest.

Sleep takes place as soon as the sensorial power, which animates the frame, becomes weakened. The volition and the organs of the senses are exhausted, and this exhaustion, under common circumstances, occurs at our ordinary hour of going to rest, or sooner, if any thing — such as heat, monotony, fatigue, or food — happen to diminish it. But the sensorial power may be increased by various means; as in cases of physical suffering, or excited imagination, and consequently is not expended at the usual time. In this case the person remains awake, and continues so until the period of its exhaustion, which may not happen for several hours after he lies down, or even not at all during the whole of that night. Now whatever increases this power — whether it be balls, assemblies, concerts, grief, joy, bodily pain, or oppression of the stomach by late suppers or intemperance — is prejudicial to repose. By these the mind is excited to unnatural action, from which it is necessary it should descend, before it can roll into

the calm channel of sleep. Whatever stimulates the external senses, however slightly, may prevent sleep. Thus the ticking of a clock has this effect with very sensitive people, when unaccustomed to it, although with others it has the opposite effect. A candle burning in the chamber is attended with the same result; even when the eyes are shut this may take place, the eyelids being sufficiently transparent to convey the rays of light to the retina. For the same reason, the light of day pouring into a window may awaken us from slumber, without the intervention of any other circumstance. It is said that Napoleon could never sleep if exposed to the influence of light, although in other circumstances slumber appeared at his bidding, with surprising readiness. Certain stimulating agents, such as tea or coffee, taken shortly before going to bed, have often the effect of preventing sleep. I would impute this to the irritable properties, which, by supplying the system with fresh sensorial power, enables it to carry on uninterruptedly all its functions, longer than it otherwise would do, and consequently prevent it from relapsing into slumber at the usual period. Any uneasy bodily feeling has the same effect, both preventing the accession of sleep and arousing us from it when it has fairly taken place. Thus while moderate fatigue induces slumber, excessive fatigue, owing to the pain and irritation it naturally occasions, drives it away.

Cold is most apt to induce sleeplessness, when it is only partial and only affects one organ at a time, especially the feet; for when general and very intense, it often has the opposite effect, and gives rise to drowsiness. Sleeplessness is frequently produced by a sense of burning heat, in the soles of the feet and palms of the hands, to which some people are subject after lying down. This seems to proceed from a want of perspiration in these parts, owing in general to a bad state of the digestive organs, or perhaps to the emotions of anger, joy, love, sorrow, or deep study, unfavorable to repose. If a man, as soon as he lays his head upon the pillow, can manage to get rid of his ideas, he is morally certain to fall asleep. There are many individuals so happily constituted that they can do so without any effort. So far from being tortured by intrusive thought, their ideas take flight without ceremony, and do not visit them again unbidden. It is very different with those whom an excess of care or study overburdens.

The sorrowful man, above all others, has the most need of sleep; but far from breathing its benignant influence over him, it flies away, and leaves him to the companionship of his own sad thoughts. His slumbers are not sleep, but a continuance of enduring thought. It is the same with the man of vivid imagination. His fancy, instead of being shrouded in the silence of sleep, becomes more full of imagery;

thoughts, in a thousand fantastic forms, pass through the mind, whose excessive activity spurns repose, and mocks the endeavors of its possessor to reduce it to quiescence. Great joy will often drive away sleep for several nights successively, but in this respect it is far inferior to grief — a fixed attack of which has been known to keep the sufferer too much awake for many months.

Those who meditate much, seldom sleep well in the early part of the night. They lie awake, perhaps, for two or three hours after going to bed, and do not fall into slumber till toward morning. Persons of this description often lie long in bed, and are reputed, very improperly, lazy by early risers — although, it is probable, they actually sleep less than those early risers themselves. Long continued study, particularly at night, is highly prejudicial to sleep. Boerhaave mentions that, on one occasion, owing to this circumstance, he did not close his eyes for six weeks.

With regard to the treatment of sleeplessness, a very few words will suffice — in fact, little more can be said than a recommendation to obviate the causes, and the effects will naturally disappear. I may mention, however, that where there is no specific disease, either of body or mind, to which the want of sleep can be imputed, the person should keep himself in as cheerful a mood as possible; and should, if his strength permits, rise early, take a cold bath, and exercise so as to fatigue himself moderately. Studious men ought to avoid late readings, and, on going to bed, endeavor to abstract the mind from all intrusive ideas. They should try to circumscribe their thoughts within the narrowest possible circle, and prevent them from rambling. The more the mind is brought to turn upon a single impression, the more it is made to approach to the state of sleep—which is the total absence of all impressions. In some cases of restlessness, sleep may be procured by the person getting up and walking about the room for a few minutes. It is not easy to explain on what principle this acts, but it is certain that by such means sleep is sometimes caused, when previously it had been solicited in vain. Washing the body in cold water, and rubbing immediately after with a coarse towel, will often produce refreshing sleep. When sleeplessness proceeds from heat of the weather, after bathing in cold water with a wet towel, the person should lie very lightly covered, and let the air circulate very freely through his room. When it arises from a burning in the soles of the feet, or palms of the hands, these parts should be bathed well with cold vinegar and water, both before going to bed and during the existence of the heat, which usually occurs two or three hours after lying down. Attention must also be paid to the stomach and bowels, as this species of sleeplessness generally proceeds from a disordered state of

these organs. Hence intemperance in eating or drinking, all indigestible articles of food, and late suppers, should be avoided.

An easy mind, a good digestion, and plenty of exercise in the open air, are the grand conducives to sound sleep; and accordingly every man, whose repose is indifferent, should endeavor to make them his own as soon as possible. Never sleep with the head covered, as the air under the clothes is apt to be vitiated, for the skin secretes perspirable matter, carbonic gas, etc. Children should sleep alone as much as possible, if we would give them vigorous lungs, sound bodies, free circulation of blood, and sound minds. Pure air and exercise is a remedy for a host of physical derangements, and far better than physic. Fat persons should sleep little and exercise much. Too much sleep weakens the nerves, disorders the brain, produces peevishness, leads to apoplexy, palsy, disturbs the heart, excites palpitations, blunts the sense of feeling, and relaxes the system, by over-perspiration in bed. Hearty suppers, strong tea and coffee, disturb the sleep. Early rising and exercise strengthen the fibers, whereas morning sleep relaxes the solids. The passions disturb the sleep and induce many diseases, as I have before stated.

Solidification (that is, the conversion of blood into the solid parts of the body) goes on only during sleep. The chief end, indeed, and object and intention of sleep, would seem to be this final assimilation of our food — this solidification of the blood into the several solid parts of the body. The accomplishment of this miraculous change seems to have required the perfect concentration of all the energies of the system upon itself. It appears to be required that every thing, both within and without the body, should be hushed into profound repose, during the accomplishment of this nightly wonder, in order that nothing might disturb or interfere with the exquisite and miraculous processes employed to effect it. To this end the portals of sensation are closed — the eyes see not, the ears hear not, the skin feels not, the very breathing is scarcely audible, and the pulsations of the heart are scarcely perceptible. All the living energies are now concentrated, with the greatest possible intensity, like rays of light into a focus, and directed, with almost complete exclusiveness, toward this simple object.

In the day, therefore, we make blood; in the night that blood is converted into solid matter. In the day we garner up the building materials; in the night, we repair the building. The hour of rising, therefore, ought to be the time at which our physical strength is at the greatest; and with perfectly healthy persons this is the case. The languor which sickly persons feel in the morning, arises from the processes of repair not having been fully accomplished; the body

has not been repaired, and therefore its strength has not been restored. The additional strength which is felt during the day, after eating, is only apparent; it is merely excitement derived from the stimulus of food; in the first instance in the stomach, and after that food has been assimilated, of new blood in the system.

From all this, we learn two important truths: first, that we should take our severest exercise in the early part of the day; secondly, we learn how and why it is that late suppers are improper.

If you would preserve your health, therefore, exercise, severe exercise — proportioned, however, to your strength — is the only means which can avail you. Recollect, the body must be disorganized, wasted, sweated, before it can be nourished; recollect the mode of training horses for the course, and men for the prize-ring. With plentiful bodily exertion, you can scarcely be ill; without bodily exertion, you can not possibly be well. By "well," I mean the enjoying as much strength as your system is capable of; and if you are in search of some charm, some talisman, which will enable you to indulge considerably in the pleasures of the table with comparative impunity, you will find it in bodily exertion, and bodily exertion only. I say — bodily exertion, to the extent of quickened breathing and sensible perspiration, kept up for three or four hours out of the twenty-four; say, by a walk of a mile or two before breakfast. Exercise taken before breakfast is worth all that can be taken afterward. I might, in a few words, include the whole subject — temperance and exercise.

But, to those who, from any cause, can not take bodily exertion, attention to diet is necessary. Even here, simplicity and quantity, rather than quality, form the grand consideration. They can not well take too little food; and wine and other strong drinks are wholly inadmissible. And let them only reflect on the mechanism of nutrition, on the manner in which our food nourishes us, what becomes of it after we have eaten it, and they can not but clearly see that this advice is sound and wholesome doctrine.

Again: "Disorders of the body, in these days, are engendered and propagated to a frightful extent, by moral commotions and anxieties of the mind." And if I have proved that corporeal exertion, especially when aided by any intellectual excitement or pursuit, can obviate the evils that ensue to soul and body from these causes, I shall do some service to the community.

It is within the reach of high and low, rich and poor, the learned and unlearned. Let moral ills overtake any of these, and he is on the highway to physical illness. To prevent the corporeal malady, and to diminish, as much as possible, the mental affection itself, the

individual must tread in the steps which I have plainly laid down. He or she must keep the body active and the stomach unoppressed, remembering that exercise gives health, vigor, and cheerfulness, sound sleep, and a keen apetite. The effects of sedentary thoughtfulness are diseases that embitter and shorten life, by interrupted rest, tasteless meals, perpetual languor, and ceaseless anxiety. The distinguished Abernethy says, "If you would be well, live upon sixpence a day and earn it."

"Sleep is kind nature's sweet restorer," and as night approaches with its sable pall, we are irresistibly urged, when in good health, to enjoy its temporary pleasure. How culpable are those, who, from a sordid motive, in order to gratify their passions, deny themselves this important aid to good health; interrupting the regular order of nature, enervating their constitutions, and destroying their gayety of heart! Why should we shorten the days which our Heavenly Father intended we should enjoy, by refusing what He has given us to prolong our life?

The nights may come, and to many people have already arrived, when instead of sweet, refreshing sleep, we may be tossing to and fro from one side of our bed to the other, counting the weary hours as they roll on, and wishing in vain for a moment's repose. Few know the real value of all the blessings our Maker has given to us, until the loss of them brings the conviction to our minds, and we desire them in vain. It is well known that young persons require more sleep than adults, and that more sleep is requisite in winter than in summer. The average duration of sleep, which may be recommended for grown people, is eight hours, but ten, or even twelve, is none too much for very young children.

Sleep and Insanity.— Dr. Brigham, of New York Asylum for the Insane, expresses the opinion that the most frequent immediate cause of insanity, and one of the most important to guard against, is the want of sleep. "So rarely," he says, "do we see a recent case of insanity, that is not preceded by a want of sleep, that we regard it as almost the sure precursor of mental derangement. Long continued wakefulness," continues Dr. Brigham, "disorders the whole system. The appetite becomes impaired, the secretions diminished or changed, the mind dejected, and soon waking dreams occur and strange phantoms appear, which at first may be transient, but ultimately take possession of the mind, and madness or death ensues." The doctor adds:

"We wish we could impress upon all the vast importance of securing sound and abundant sleep; if so, we should feel that we had done an immense good to our fellow-beings, not merely in preventing insan-

ity, but other diseases also. We are confident that the origin of much of the nervousness and impaired health of individuals who are not decidedly sick, is owing to a want of sufficient and quiet rest."

Dr. Brigham gives the following hints for the procuring of sound sleep:

"*First.* — It is important that the mind should not be disturbed for several hours before retiring to rest.

"*Second.* — Retire early, and neither when very warm or cold; sleep on a hard mattress, or on a bed not very soft. The bed-room should be large and well ventilated, and the bed should not be placed near the wall or near a window, as such an arrangement often exposes the person to currents of cold air.

"*Third.* — There should be nothing tight about the neck, and the Chinese rule of brushing the teeth before retiring is a good one. Tea and coffee, taken late in the evening, are apt to disturb the sleep. Strive to banish thoughts, as much as possible, on retiring to rest. Study during the evening is improper."

It is asserted that a grain of camphor, in pill form, followed by a draught of an ounce and a half of the infusion of hops with five drops of sulphuric ether in it, will procure sleep in the first developments of insanity, when nothing else will. It has been tried, and its success acknowledged. Bathing the head with spirits of camphor will often produce sleep in the most nervous persons.

In a long experience in my practice, I have found nothing that renders sleep so refreshing as the cold bath every night, and so invigorating and strengthening as the cold bath on rising in the morning, and rubbing immediately after it with a coarse towel.

INSOMNIA OR SLEEPLESSNESS.

DR. BENJ. W. RICHARDSON, LL.D., F.R.S., in his recent work, "*The Field of Disease*," remarks that the habit of keeping irregular hours and taking too little sleep leads to serious forms of disease. "I know of no habit tending more surely to shorten life than that of fighting against natural periods of rest. In members of my own profession I have seen this; in members of the dramatic profession; in politicians; in scholars who habitually incline to work through the night, and in many more who, by their occupation, are obliged to work or watch while others sleep. Imposed or self-imposed, I have seen nothing

but universal evil from the habit. I do not want rigidly to maintain that sleep must be taken at certain particular hours, but I believe it to be best to take it at certain hours, including the first hours of the night.

"Persons of vigorous constitution may go on several years disregarding proper hours of sleep, and the insomnia which springs from the habit, without any apparent bad effect, but in time it is certain to produce its natural consequences. The first indications are irritability of mind and feverish excitement, followed by depression, pallor and deficiency of appetite. These are succeeded by fits of unconsciousness, in which the person may positively sleep, and sleep soundly without himself knowing the fact. In this way rest is had which may give a certain measure of relief, but soon the nervous failure increases, and one of two results follows. He either continues sleepless, unless artificially made to sleep by narcotics, and so with progressive failing powers sinks into paralysis, to succumb from that, or falls into a sleep which becomes a coma, and terminates in death.

"In exceptional cases, under a carefully regulated mode of life, which leads the sufferer to bed at very early hours, such as eight or nine o'clock, the insomnia is often cured without artificial aid. It is, however, apt to return after mental strain or worry, and may always be expected to return if the strain or worry be severe or prolonged.

"Among the evils resulting from physical, nervous failure, and often following, may be named paralysis of the limbs, diabetes, affections of the kidneys, degeneration of the structure of those organs, and by no means a rare occurrence is the disorganization of the structure of the heart."

HINTS FOR DYSPEPTICS.

DR. JOHN B. GILL, member of the Royal College Physicians, Edinburgh, is the author of a work on "Indigestion. What it Is; What it Leads To; and a New Method of Treating It." Dr. Gill invites the reader at the start to remember that true feeding consists in taking the exact amount of nourishment that can be assimilated. To exceed this will generate poisons in the system. He says the subject of indigestion covers the whole domain of medicine. He gives these aphorisms for the dyspeptic to learn by heart:

Let each man take that which he finds, by experience, to suit him—not his neighbor; carefully distinguishing between natural tastes and acquired bad habits.

One man's meat is another's poison.

Earn your loaf before you eat it.

Always rise from table unsatiated.
Stimulation must be followed by depression.
Live peaceably with all men.
Eat slowly.
After dinner sit awhile, after supper walk a mile.
Eat when you are hungry, not when it is meal time, except it be very lightly.
Eat only such a quantity that you shall be hungry when meal time comes round.
Let your food be proportionate to your work.
Be temperate in all things.
Nature loves regularity.
Dr. Diet is the best physician.
It is not good for man to be alone.
Idleness is the stomach's hangman.

In the treatment of indigestion the author would cut off alcohol, tobacco, tea, coffee, suppers, pastry, anything cooked inclosed in a crust, and dishes warmed over. The Russian bath is highly recommended. Idleness is injurious. Industry, short of overwork, helps the dyspeptic. Drugs should be dispensed with as much as possible. Clothing should be loose and suitable, never oppressive. Society and music should be cultivated. The sun-cure has undoubted virtues. Scientific bathing is placed next to diet as a curative agent in this disease.

WRONG THEORIES OF MEDICINE.

IT is to be feared that to most people medicine is not an erudite science or a learned art, but is little more than the commonplace administration of physic. They cannot understand medicine without drugs, and its virtue and power are properly measured by the violence of its operations. Its very name is, in ordinary parlance, synonymous with physic. Take from it its pills and potions, and for them you take away its whole art and mystery. They do not believe in a scheme of treatment, however deep-laid and skilful, which does not include a certain statutory dosage. So that, as a rule, medical men are practically compelled to give their patients a visible object of faith in some form of physic, which may be at most designed to effect some very subordinate purpose. And it is remarkable how strongly, even among the educated classes, this feeling prevails. Cure by the aid of administration of mixtures and boluses is so fixed and ancient a tradition that it is only very slowly that the world will give it up. The anxiety of the friends of the patient wants to do more than follow the simple directions of "nursing," which have been so carefully inculcated and possess, apparently, so little remedial power. There is nothing of the unknown about them in which a fluttering hope of great advantage can nestle. Thus, it is necessary to educate the world into a belief in medicine apart from drugs, which finds its power of curing in adaptations of the common conditions of life and applications of physiological facts—a medicine which takes into its hands the whole life, and orders and fashions its every detail with scientific definiteness. It is found in every-day practice that this popular misunderstanding of the modern spirit of medicine constantly checks the little tentative advances of a more scientific treatment, and it is necessary that it should be generally understood how powerfully the various processes of the economy may be affected by the manipulation of the conditions of common life.

HOW TO SECURE SLEEP.

DR. SELDEN H. TALCOTT, Supt. of the New York Homœopathic Asylum for the Insane, whose opportunities for observation have been large, says that our national lack is that of recuperating sleep. Against the use of the so-called hypnotics, or medicines that tend to produce sleep, he protests, because the temporary benefits are heavily discounted by the evil effects which almost always follow. Two conditions oppose the acquirement of sleep. These are too great a flow of blood to the brain—stimulating it to undue activity, and playing the part of a whip and spur to a tired horse—and the opposite of this, excessive cerebral anæmia. To relieve the former by rational methods, the blood forces must be enticed away from "their persistent assaults upon the cranial fortress." This can best be accomplished by filling the stomach with solid food, thus furnishing temporary engagement by attracting the circulation to the stomach. The food should be of the coarsest and plainest, else the remedy might produce an aggravation. Should excessive anæmia exist, and a state of nerve irritability and trepidation be thus produced, take liquid food, such as Hot Milk, Beef-tea, and Broths about an hour before sleep is intended. This is of peculiar value to persons of sedentary habits, to those who take too little exercise, and to those who suffer from imperfect circulation.

COLD BATHING.

WE are no hydropathists, in the ordinary acceptation of the term, but we are desirous to do justice, and give such information honestly and fearlessly to our readers, in such matters as will be most essential and beneficial in prolonging life and arresting disease. The cold, tepid, warm, or shower bath, as it may agree with the person who uses it, as a means of preserving health, ought to be in as common use as a change of apparel, for it is equally promotive of necessary cleanliness. When the saline and animal elements, left by the perspiration, are not duly removed by washing or bathing, they at last obstruct the pores, irritate the skin, and produce many diseases. This is the reason that, in the eastern and warmer countries, ablution and bathing have assumed the rank and importance of religious observances. The importance of this habit of bathing once a day can not be too strongly urged upon persons desirous of obtaining and preserving their health. We ought to wash all over with water every day, so as to cleanse the pores of the skin, and with a rough towel rub thoroughly after the bath. If one-tenth of the persevering attention and labor bestowed to so much purpose in rubbing down and currying the skins of horses, were bestowed by the human race in keeping themselves in good condition, and a little attention were paid to diet and change of clothing, colds, nervous diseases, and stomach complaints, with many

female complaints, such as weakness, diseases of the womb, whites, irregularity of the monthly sickness, together with the many nervous disorders under which females suffer, would cease to form so large an item in the catalogue of human miseries. If the bath can not be had at all places, water and a little soap may be obtained every where. Then wash the body over as quickly as possible, and rub well with the towel, so as to rouse the circulation. It will afford the finest glow to the body, and produce the most delightful feelings of comfort. Remember you should accustom yourself gradually to the use of the cold bath. First tepid, or warm, and by degrees diminish the heat until you become accustomed to the cold bath. For some diseases, when not too warm, and not prolonged beyond fifteen or twenty minutes, the tepid bath may be employed daily with perfect safety and advantage, by persons in health; while invalids, whose condition requires its use, are often strengthened by a much longer and equally frequent immersion. In winter especially, and for those who are not so robust and full of animal heat, perhaps there may be more benefit from the general use of the tepid or warm bath. All depends, however, on the speedy method in which it is done in the cold or shower bath, wiping immediately dry, and possibly lying for a few moments in bed, covered, until reaction takes place.

Bathing is too much neglected in this country, either from want of thought upon its importance, or a want of convenience for its enjoyment; but with a little expense such convenience might be provided wherever there is a pump, well, or spring of water. The facilities should not only be afforded, but those who have charge of families should make it a point to see that they are provided with such necessary articles, and attend in instructing them as to their use and benefits, and thereby not only preserve health, but save many a doctor bill, and not unfrequently prevent lingering disease in the family. Ask the laboring man, ask any one who labors with mind or body, or who is accustomed to being daily or very frequently refreshed with the shower or plunging bath, what would induce him to forego it? Rising in the morning exhausted and languid, from the effects of oppressive heat, he comes out from his bath invigorated, and capable of thinking not only more clearly, but working with so much more alertness and satisfaction, that he would sooner relinquish one meal a day than give up his bath. He only, who habitually enjoys it, can estimate the privation when no means are to be had for the indulgence. Those who have investigated the art of preserving health, will find that the cleanliness of the person is to be considered next in importance after air and food.

The temperature of the cold bath varies from forty-five to eighty-

five degrees Fahrenheit. In a medical point of view, it is considered as a tonic and stimulant when not too long continued. In order to produce its full effects, the bather should feel a pleasant glow upon the surface of the body, immediately on coming out of the water. If the sensation of coldness or shivering follow the bath, the immersion should not be repeated.

In using the cold bath, it is of essential importance to know that there is no truth in the popular opinion, that "it is safer to enter the water when the body is cool, and that persons heated by exercise, and beginning to perspire, should wait till they are perfectly cool." For it is a rule, liable to *no exception*, that *moderate exercise ought always to precede cold bathing;* as neither *previous rest*, nor *exercise to a violent degree* is proper on this occasion.

The best place for cold bathing is in the sea, a clear river, a lake, or pond; but when none of these can conveniently be had, the bathing-tub, shower bath, or wet towel, should be vigorously used.

The morning is a proper time for using the cold bath, unless it be in a river or lake; in which case, the afternoon, or from one to two hours before sunset, will be more appropriate. On the whole, one hour after a light breakfast, or two hours before, or four hours after dinner, are regarded as the better periods of the day for the purpose.

The best preparation for cold bathing for invalids is, to begin with a warm bath, then a tepid one, after which, in most cases, they may plunge with safety into a cold bath. Generally, an immersion every second day from the commencement of warm bathing to the end of a fortnight, will suffice; after this, the cold bath may be continued daily. Persons in health, and possessing robust constitutions, should bathe, year in and year out, at least twice a week, in cold water, and if these ablutions be performed daily, so much the better will it be for their health.

On entering a cold bath, the head should first come in contact with the water, either by immersion, by being showered upon, or by covering it a minute or so with a wet cloth. Afterward, the bather may plunge into the water headlong, as the immersion will be less felt when it is effected suddenly. As it is of consequence that the first impression should be uniform over the whole body, the bath ought not to be entered slowly, nor timorously, but with a degree of boldness.

For these reasons, the shower bath is attended with considerable advantage, because it transmits the water quickly over the whole body. Therefore, while in the water, the bather should not remain inactive, but apply brisk and general friction, and move his arms and legs, by swimming, or otherwise, in order to promote the circulation of the blood from the heart to the extremities. For, in all cases, it is

extremely imprudent to continue in the bath until the body becomes chilly.

In our large cities, frequent bathing has become an almost universal practice. Few houses are built without a room furnished with the apparatus for a plunge and shower-bath. In many, both hot and cold water are introduced; but the tepid bath, unless for very frail constitutions; that are unable to bear the shock of the cold plunge, does very little good. To those thus supplied we have very little to say, more than to advise them not to neglect such opportunities; but we were astonished, on a recent country excursion, to find how few families were supplied with any thing like conveniences for this "aid to neatness," this health-preserving habit. In many instances a bath-house might have been erected at a very small expense, and cold water supplied in abundance from neighboring brooks or ponds. Again, a little stream coursed by the very door, and might still more easily have been put to profitable use. Our farmers never forget the barn, the corn-crib, or the "spring-house;" but a bath-room, quite as necessary to the comfort and health of their households, rarely enters into the calculation. Even when it is impossible to convey a sufficient supply of the element directly into the house, a sponge and plentiful buckets of water will be found to answer the purpose admirably, where a bath is unattainable. No person is excusable for neglecting a daily ablution with the common "wash-bowl and pitcher" apparatus within reach. With them, and a square of oil-cloth to protect the carpet or floor, he may gain comfort and increasing strength, with very little trouble and expense.

We have seen families in the country—nor was it many years ago—where once a month was considered often enough for bathing, ay, and we blush to record it, some extended the period indefinitely, particularly in winter. Face and hands duly cared for morning and afternoon, the duty of neatness was supposed to be fulfilled. This is an unpleasant truth, but not the less a fact; and we fear it has not altogether passed away. Let us hope, from the great benefits the cold bath has, for the last few years, produced throughout our country, that we may speedily see a radical change, and this valuable remedial agent be introduced into every family.

The only objection that can be urged against this healthful practice is prompted by indolence—a cowardly shrinking from the trouble, and, mayhap, from the chill of the first plunge; but this grows less and less—habit will aid us—and by rising a few minutes earlier, the busiest man or woman may secure the necessary time. Then the warm glow, and brisk, healthful circulation that succeeds the chill, is ample repayment for all transient discomfort. The unshrinking

nse of a coarse towel, a short, quick walk in the open air, if possible, directly after, and the most delicate will return with a good appetite to the breakfast-room ; a prescription that we would enforce by earnest solicitations, for a trial at least, to those of our readers who wish a long life and a healthful one.

Many persons, too, are most benefited by the shower bath. In a word, all sensible individuals can determine when and how to bathe; but bathe, at some time, and in some manner, they should. If we were asked what was most needed for the health of the country, we should say, "Baths — baths — baths." Every dwelling-house ought to have a bath, just as it has a kitchen ; for one is quite as necessary as the other.

The cold bath is beneficial. Generally it is the best stimulant of the nerves, the best quickener of every function, and the most delightful invigorator of the whole frame. Under its influence both brain and muscles are qualified for their utmost activity. It should not, however, be too long indulged in, lest it bring on debility ; but the exact duration can not be laid down, as the same person, on different occasions, will require different periods of duration. A cold bath may always be safely applied, notwithstanding a popular notion to the contrary, when the surface of the body is heated by the warmth from without.

The fact is, there is no danger of going into a cold bath while perspiring: *First*, Because it has been practiced, by Priessnitz, on thousands of patients, for twenty years, and no single instance of mischief has been ever observed to arise from it. *Secondly*, It has been the habitual custom of the Russians from time immemorial, and no danger has been observed to attend it. *Thirdly*, The laboring classes of society are constantly exposed to be drenched to the skin almost daily, during the rainy months, while they are covered with perspiration, arising from their several out-of-doors employments, and no evil has been observed to accrue from it if equal exercise be continued ; on the contrary, they suffer less from disease than those above them in wealth. Remember this. The continued application of cold water in acute diseases, as by the cold bath, or wet blanket or sheet, for several hours, will lessen the pulse even to a thread, while the occasional use of the bath, accompanied by exercise in the air, simple diet, early hours, drinking nothing but cold water, will strengthen and harden the system to a degree infinitely beyond that which can be obtained by any other means whatever. Thus it supplies the place of the two grand engines of the old practice, viz.: quinine and the lancet.

I do not think the greatest benefit of the cold bath is to be found

in its proving a remedy for every disease — though, as such, it is highly valuable, and too little appreciated and used in this country. It is in preventing disease that its worth is pre-eminently seen. If commenced in infancy, almost any child may be inured to its use, and its constitution so tempered, by becoming gradually accustomed to its use, as to be little affected by atmospheric vicissitudes or changes of weather.

If commenced at adult age, before disease has begun its ravages, or the constitution is greatly undermined, any one may so far harden himself that sudden changes will do him but little injury. I consider the cold bath, if commenced early and properly administered, as the greatest safeguard against the various diseases with which we are acquainted. If it be true, as has been said of the aborigines of this country, that they immersed their newly-born infants in cold water, it is, to say the least of it, not a very unwise or injudicious practice. No person can live in our climate without exposure to its vicissitudes, and there is no guard so effectual as the use of cold water, in some way applied to the surface of the body. As a remedy in certain diseases, it is invaluable, as in small-pox, scarlet fever, measles, and other rashes. In all these we may wash the skin freely with cold water from the commencement to the close of the disease. It is thus rendered soft, the acrid matter passes more freely through the pores, and the fever is abated. In small-pox, the cold sea-bathing has been found quite salutary. Dr. Eberle, in his *Practice of Medicine*, on Scarlet Fever, says:

"The application of cold water to the surface of the body can not be too strongly recommended in the higher grades of this affection," and he quotes the following passage from Bateman: "As far as my experience has taught, we have no physical agent by which the functions of the animal economy are controlled with so much certainty, safety, and promptitude, as cold water to the skin, under the heat in scarlet fever, and diseases where there is great heat.

TO ESCAPE DROWNING.

[The *Chicago Daily Inter Ocean* of Saturday, Aug. 14, 1886, gives the following authentic narrative, of valuable information.]

A GENTLEMAN prominent in business in Chicago asks *The Inter Ocean* to emphasize a fact published some months ago about how to avoid drowning when unable to swim. The directions were, "Lock the hands behind the back, and fully inflate the lungs and close the

mouth." The reason he asks this is that some years ago he lost an only son by drowning in the Mississippi River, and, as would be natural, anything referring to the subject quickly arrests his attention. After reading the article, he read it aloud to his wife and daughter, and upon the latter it made a profound impression. Two or three weeks ago, while his daughter was enjoying a row on Lake Michigan, a huge wave capsized the boat and threw her into the water, which was deep. While the daughter was sinking she remembered the directions, clasped her hands behind her, and when she arose, threw the water from her mouth and filled her lungs full of air before she sunk a second time. She went under but a short distance, and upon reaching the surface, she floated until a boat put out from shore and rescued her. The gentleman remarked: "Had it not been for these wise directions repeated to my daughter, and her obeying them, I am satisfied I would be to-day childless." This year there have been an unusually large number of deaths from drowning, and it would seem wise for parents to impress these simple directions on the minds of young people. They are good even for those who can swim, for it will enable them to rest, and have better opportunity for rescue.

WARM BATHING.

WE apprehend that the real cause of the beneficial effects of one kind of bathing, and the injurious character of the other, depends on the particular individual, and that while cold bathing is healthy for some persons, hot baths are healthy for others. Medical writers, who have studied the subject, inform us that robust persons are benefited most by cold baths; and debilitated ones by warm baths. This is the view especially by Dr. Moore, in his work on *Health, Disease, and Remedy.* Strange as it may seem, experience has proved that, after great fatigue, the apparently enervating warm bath is peculiarly refreshing, a fact of which Napoleon availed himself, it being his practice, after having been on horseback for the whole day, as he frequently was, to take a warm bath and retire to rest.

In all nervous disorders accompanied with debility, in all cases where there is dryness of the skin and tendency to feverishness, in continued loss of sleep, in excessive fatigue, and in convulsive diseases of children, warm baths have been in my practice generally successful. Where there is an irregular circulation of the blood, as when a person can not take due exercise, and is subject to coldness of the feet or hands, warm baths are beneficial. In many forms of conges-

tion and dyspepsia, with tenderness of the stomach, the warm bath possesses highly curative powers. But to plethoric persons, to persons subject to hemorrhage, or bleeding of any kind, or where there is acute disease of an inflammatory kind affecting internal organs, more especially the heart, lungs, or bowels, warm baths are decidedly injurious. Where there is any structural disorder of the heart, however, the use of the bath in any form is at all times attended with risk. Generally, the warm bath promotes appetite, digestion, and sound sleep, renders the body highly electric, and if not indulged to excess, contributes to the establishment of increased vigor. When, however, warm bathing is employed excessively, it produces a flaccidity of the system, and encourages that relaxation of the veins which leads to undue formation of fat. Whenever there is a tendency to dropsy, the warm bath should be avoided.

A warm bath has, in hundreds of instances, and thousands, averted and cured diseases that bitter experience tells us have proved fatal for want of one. That it is conducive to health; that it is frequently a good substitute for exercise and physic, when the former can scarcely be had, and the latter has been already too much swallowed, is indisputable. That it equalizes the circulation of the blood, renders the skin supple and moist, promotes free circulation, and relieves the body from a layer of thick, obstructive accumulation of scurf, and oleaginous surfacial deposit, and so proves salutary, giving thereby an impetus to absorption and secretion, is also a great fact; and, therefore, it is most wholesome and wise, on not too frequent occasions, to avail one's self of it.

A man, to be healthy, who does not bathe in cold water, should certainly take a warm bath once a week; certainly a fortnight should not pass without one. Let the skeptic try the experiment, and in addition to improved feelings, the great one of knowing his entire body to be clean, and spotless, and wholesome, will be such a comfort that misery is in store if the practice be omitted. The effect of a warm bath to a person in health is highly delightful. The sensations during the process are exquisite, and afterward no less so. The liberty of motion, the pleasurable and agreeable diffusion of warmth, and the perfect ease during the indulgence, have no parallel. The flexibility of the joints, the freedom of respiration, the improved tone of nervous feeling in mind and body, the intellect being brighter, and every faculty livelier — memory, thought, and idea at command, after the bath, are notorious truths known to the patron of the warm ablution. The next view may be the virtues of warm bathing in illness, in severe cases, or to a person (for these observations apply to both sexes, and of the two with perhaps greater right to the ladies,) in delicate

health, or in dyspeptic or nervous debility. First, the bath allays all pain, and removes all not positively inflammatory symptoms; and even in these it is highly serviceable under proper advice. It quiets nervous irritability, promotes general perspiration, quickens and yet softens the circulation, overcoming obstructions in the deep-seated parts, and allowing an easy and regular flow of the blood throughout its course. Warm bathing also acts beneficially on the kidneys and urinary organs; helps the bowels, and stomach, and liver, giving new life to each, the action of each being thereby healthily excited; it consequently promotes digestion, and, contrary to the popular fear of a warm bath weakening, it in reality strengthens the system; and furthermore, in opposition likewise to the apprehension that a warm bath is dangerous, as being liable to give cold afterward, it, I unhesitatingly declare, fortifies you against one. Colds are only taken when the bath exhausts, when it is taken too hot, or the bather has been too long in it, or he incautiously submits himself to draughts, or lingers about in cold or damp air, and so "takes a chill," on coming out of one. In all cases of restlessness — the fidgets — in hypochondriasis, better known as low spirits — general bodily and mental depression — the warm bath is most useful; it tranquilizes the whole system, induces a good night's rest, soothes excitability, stills an irregular and fluctuating pulse, and calms a turbulent mind. As a matter of health and duty, the bath is imperative; as one of ease and comfort, and enjoyment, and lastly of cleanliness, incomparable: omission from distrust in the first instance, is folly; from dilatoriness or indolence, or on the score of trouble or expense, unpardonable.

The usual temperature of the warm bath is ninety-eight degrees, but according to the object in view, it can be modified and borne at the pleasure of the bather: if taken for mere refreshment and cleanliness, the above heat will prove very agreeable, and suitable for the purpose; if suffering from cold or other indisposition, and perspiration be desirable, one hundred degrees will be found effective, and ten minutes are quite long enough to remain in it; if the stay be much protracted, exhaustion follows, and the effect is hurtful. The French people accustom themselves to pass a full hour in the warm bath, but the practice is relaxing, and, indeed, enervating; and the people of this country would soon find it so. The best time for taking a bath is before a meal, or else some time after one. The morning is the most favorable for invalids, because the body is fresh, and able to encounter any little extra fatigue; but the bath is equally serviceable at all periods of the day — morning, noon, or evening; and those persons whose engagements are imperative, during what are called business hours, must not plead "the fear of taking cold after sunset,"

as an excuse for the omission. Indeed, the apprehension of taking cold (which prevails to a popular degree,) after a warm bath, under any circumstances, is quite groundless; for, in fact, instead of predisposing a person to a catarrh, or a rheumatic attack, or, in plain words, a cold, the bath absolutely helps to keep one or either off. The absolute effect of a hot bath is, that it stimulates, arouses, and keeps up the circulation, thereby diffusing warmth throughout the frame, which renders it invulnerable to the dreaded evil; and if a man does not suffer that excitement to subside, and does not linger about in cold or damp air, but proceeds briskly on his way, he will derive the double benefit of feeling stronger and better, if possible, than before, and of enjoying the refreshment of the immersion. A bath may be taken safely in the "bitterest" and coldest weather. Foggy, damp, and wet days are the least favorable for the indulgence. In the summer the bath is most essential, for the skin having double duty to perform, urgently requires to be kept clean, lest any obstruction to the perspiration should ensue. If the bath be wanted for a specific purpose, and the illness be one of uncertainty, a medical opinion had better be had; but I am not speaking "*fee* prospectively," for, invaluable as professional guidance must be admitted to be on every occasion, especially if it be good, I always advocate that common sense should tell "when to run for the doctor," and when to do without him, and, therefore, must leave my readers to discriminate for themselves. Great as the pleasure, delight, and salubrity of warm bathing is, there is a time and season for all things. I have observed, that for cleanliness, and comfort, and health, a warm bath may be taken once a week, or once a fortnight at least, but for special purposes, one may be taken daily for a time, or twice or thrice a week; but the practice must not degenerate into such frequency as to enervate and enfeeble, which, like any other practice carried to excess, it will do. All that I can add is, that the warm bath is a most excellent adjunct in the restoration and maintenance of health. It rarely hurts one, but its services are manifold; for cleanliness is a speaking advertisement, and carries with it the comforts, agreeable feelings, and permanent health, which nothing else can so effectually insure.

I can not conclude this important subject without remarking, if we would attend more to bathing, diet, exercise, and simple remedies, we would have but little use for the physician, and thereby prolong life to a good old age.

The warm bath is among the most useful of remedial measures. One who has experienced the delicious refreshment of a warm bath at about the temperature of the blood, (100,) whether from disease or exertion, will need no argument in its favor.

THE HEAT CURE OR HOT-WATER CURE.

BY R. M. LACKEY, M.D.,

OF OAK PARK, CHICAGO.

HEAT is almost synonymous with life itself; its absence, one of the surest indications of imperfect vital action, and one of the invariable warnings of approaching dissolution. It is constantly employed as a remedy by all classes and schools of physicians, as well as in domestic practice. It is in the most desperate cases that it is most diligently employed. The hot bath, fomentations, hot poultices, hot bricks, bottles of hot water, hot salt, sand in bags for external use, and hot water, hot teas, etc., internally, are some of the common devices for the application of this powerful agent. Who that has been a sufferer from painful disease that has not experienced its prompt relief? If heat is a remedy of such value, it is certainly an important matter to have at command convenient methods for its application, that we may secure its full benefits. The Turkish bath affords the most effective method of applying heat to the whole surface of the body until perspiration is induced. The second process of this bath is that of shampooing the entire body, which loosens up the effete matters and scarf-skin, promotes the circulation of blood in the muscles and adjacent tissues, and soothes the nervous system; followed by washing off the skin and gradually reducing the temperature of the body to the natural standard by the use of water, either in the form of spray, douche, shower or plunge, and, lastly, by drying and airing, which prepare the bather for the outer world again, and fortify him against the danger of taking cold.

The Turkish bath, then, is a hot-air bath, the temperature of the bath chamber varying from that of the first room, or the Tepidarium, at 110 to 120 degrees, to the Calidarium at 130 to 180 degrees. The effect of the high heat, of course, is to quickly induce profuse perspiration, which is of great value; but it does more than this, it improves the organic structure by hastening the carrying away the dead matters from the body. It equalizes the circulation and increases the respiratory powers. It improves the innervation of the whole system, and quickens and restores sensation.

Did you ever consider the vast importance of the skin as a sluice-way of the body? It has been recorded that at a pageant to celebrate the birthday of Pope Leo X., a boy, fifteen years of age, was exhibited, varnished all over and covered with gold leaf, to represent the golden age.

He died before the ceremonies were over, because the action of the skin was for the time destroyed. Physiologists have tried similar experiments with animals with like fatal consequences.

The operation of heat, then, is advantageous in so many cases that we are inclined to conclude that the question is not so much what diseases it will cure, but rather what diseases are not benefited by it?

Some years ago the writer made a somewhat protracted visit to the Hot Springs of Arkansas to test the value of the thermal waters as a curative agent.

He found there invalids from all sections of the country, who were afflicted with a variety of diseases. Many of these were *cured* of their maladies, and nearly all were benefited. The question naturally arose, How comes this physical regeneration? what is the curative agent? On reference to the analysis of the waters of these springs, it was evident that they contained no substances possessed of special medicinal properties. In an article by the writer hereof, published in the *Chicago Medical Journal*, in January, 1866, he makes the following statement on this point: "It is evident, from the analysis of these waters, that their medical virtues are due to their high temperature mainly, if not altogether. It is by a judicious system of bathing and steaming, and drinking the hot water, causing copious sweating, arousing the absorbents and the eliminative functions, creating a sluice-way for the dead and poisonous matters in the system, that the curative action of these waters is to be obtained. This was about the first special advocacy of the heat cure and hot-water cure in this country, and since then I have used it extensively in my private practice in the various simple methods which are at all times at the command of every one, and especially by means of my portable Turkish or hot-air bath apparatus. This bath can be set up in any room eight or ten feet square, and affords the conveniences of a perfect Turkish bath."

Hot-water drinking has become quite a craze of late, and has done good in many cases and harm in some. In certain forms of dyspepsia, liver complaint, kidney disease, rheumatism, etc., it is of great value. In obstinate nausea, small sips of water as hot as can be borne will often relieve when nothing else can be retained on the stomach. Persons troubled with dry, hard stools are often relieved by copious draughts of hot water on rising in the morning; neuralgic pains in the stomach are often relieved by hot drinks.

To sum up on this topic, no remedy that bountiful Nature has provided us for the cure of our many ills is more efficacious and harmless than heat, when employed with reasonable intelligence.

OPEN-AIR EXERCISE.

MODERATE exercise in the open air, for the purpose of assisting the various secretions, is another essential requisite for the production and maintenance of good health. None can neglect it with impunity; but a sedentary life is certainly not so detrimental to those who live on vegetable diet. Unless sufficient oxygen be supplied to the lungs by daily exercise in the open air, the products of decomposition will fail to be removed in sufficient quantity for the maintenance of a healthy state, and the assimilation of new matter is impeded. Without exercise, also, the contractile powers of the heart and large arteries are feebly exerted, and though sufficient to carry the blood to the ultimate tissue, it is, nevertheless, not strong enough to carry it through with that rapidity necessary for health. The ultimate tissue being thus filled faster than it is emptied, congestion takes place in those delicate and important vessels which compose it, as well as in the large veins, the office of which is to convey the blood from the tissue to the heart. One of the chief conditions of the body in that general ill state of health, usually denominated "indigestion," is congestion of the blood in the ultimate tissues of our organs, the brain, the spinal marrow, the stomach, the ganglionic system, the liver, bowels, and all the organs concerned in the nutrition of the body. When the system, therefore, undebilitated by disease, will admit a good supply of oxygen by muscular exercise, it is the best means of diminishing the amount of venous blood (in conjunction with a legitimate supply of proper food), of increasing the amount of arterial blood, and in proportion as the latter preponderates over the former, shall we possess health and muscular strength, as well as elasticity of mind.

Of all kinds of exercise, walking is that which is the most universally attainable, and, at the same time, the best, calling, as it does, many muscles into action, and especially those of the lower extremities, of which the circulation is apt to be more languidly and imperfectly performed, from the degree of resistance presented by the force of gravity to the return of the blood to the heart, calling, moreover, so much of the moving apparatus of the body into reciprocal and balanced action; flexor and extensor muscles being correspondingly exercised. Walking is undoubtedly the best of all exercises for the purpose of health, independently of its secondary, and by no means little useful effect, of carrying the respiratory organs into the freer and purer air, and exposing the system to the extraordinary and (at

least in the colder and temperate countries of the earth) healthful influence of the direct rays of the sun.

The degree of the exercise must, of course, vary with the age, condition, and habits of the individual; but the degree of exercise that is in most cases serviceable, is much underrated. Two miles a day is the minimum distance which a person of moderate health and strength ought to walk. If the powers of the system increase, or are stronger to begin with, the minimum ought to be four miles. The object should be, in most cases, to walk four miles in an hour; and the invalid, beginning, perhaps, by walking a mile, or a mile and a half, in an hour, might *gradually* increase his rate of walking, until he had accomplished his end.

Quick walking calls more muscles into action than slow walking does, and is, therefore, better. The muscles of the back and trunk, neck and arms, are comparatively very little used in slow walking. A person can hardly walk quickly without using them to a very considerable degree. It is a maxim so sound and important as to deserve frequent repetition, that the greater the number of the muscles used, the more advantageous will be the exercise.

Muscular exercise is a direct source of pleasure to every one not suffering from diseased action. Every one must have felt this. The effect of using the muscles of voluntary motion, when all the processes of the economy are being justly and healthily performed, is to impart a marked and grateful stimulus to the sentient nerves of the part, and a corresponding and grateful stimulus to the nervous system generally, always ministering indirectly to the happiness of the individual, coloring and brightening the thoughts and feelings.

Man derives an immediate pleasurable sensation from using his voluntary muscles, which not only gives to labor a zest, and even to monotonous movements some degree of enjoyment, but produces a reaction on the mind itself, rewarding a life of virtuous toil with a large degree of physical enjoyment and mental energy, buoyancy, and hopeful light-heartedness. However sullen the disposition may be among our griefs at home, exercise in the open air cheers us up; however listless the limbs may have been, sustaining a too heavy heart, they are braced up by exercise, and the lagging gait becomes again buoyant; however perverse the memory, presenting all that is gloomy and agonizing, exercise and change of scene lull it to rest, and the sleep of memory is a day in Paradise to the unhappy. The breathing of cold air, the wind to the face or head, is rest and comfort, which must be felt at such times to be believed. We should, therefore, take exercise in the open air every day. Neither the heart, the stomach, the liver, the bowels, the lungs, the kidneys, the brain

nor the skin, will work on with a healthy action, without walking and exercise every day. How many persons are shut up for days, weeks, or months, without any recreation or exercise! You should remember, that the mind requires rest as well as the body, and that a lack of exercise produces a train of nervous diseases, and a permanent one is that of Dyspepsia.

Exercise is very important in the cure of disease, and if more of it were taken and less medicine used, it would be better for mankind. Although the cure of disease is the principal employment of the physician, yet, if he is an honest man and wishes to do right to his fellow man, his labors are far from ending here. He owes to humanity a nobler and higher duty, far removed from the influence of all selfish motives. It is to apply the principles of physiology and Hygiene for the prevention of disease, and the removal of its causes, in other words, to be honest, and advise exercise and temperance, with the use of as little medicine as possible. Bodily exercise is one of the most important means provided by nature for the maintenance of health, and, in order to prove the advantages of exercise, we shall show what should be exercised, and the modes by which the object may be accomplished.

The human body is, in reality, a machine, the various parts of which are beautifully adapted to each other, so that if one suffers all must suffer. The bones and muscles are the parts on which motion most depends. There are four hundred muscles in the body, each performing a specific duty. They assist the tendons in keeping the bones in their places, and put them in motion. Whether we run, walk, or sit, or stoop, bend the head, arm, or leg, or chew food, we may be said to open and shut a number of hinges, or ball and socket joints. It is a provision of nature that, to a certain extent, the more the muscles are exercised, the stronger do they become; hence, mechanics, laborers, farmers, and others, are stronger and more muscular than those whose lives are passed in easy, light, and professional duties. Besides strengthening the limbs, muscular exercise has a most beneficial influence on the circulation of the blood and on respiration. The larger blood-vessels are generally placed deep among the muscles; consequently, when the latter are put into motion, the blood is driven through the arteries and the veins with much greater rapidity than when there is no exercise; it is more completely purified, as the action of the insensible perspiration is promoted, which relieves the blood of many matters taken up in its passage through the system, and thus diffuses a feeling of lightness and cheerfulness over the body and mind.

Recreation should be taken which will exercise *all* the muscles.

Most of our city employments compel the workers to stand or sit in unnatural positions, using only a few of their muscles, while the others remain comparatively inactive. Tailors, sawyers, shoemakers, engravers, watchmakers, and many others, such as cotton-spinners, dress-makers, present either awkward movements in limbs or eyes, or are sickly or sallow-looking. Such parties are commonly affected with indigestion, giddiness, headache, or diarrhea. Merchants, store-keepers, lawyers, writers, etc., pass weeks without exercise in the open air, and when opportunity offers, they have lost the inclination. These parties suffer from indigestion, costiveness, cancer of stomach, and stagnant circulation of the blood and all its attendant maladies. Now there is no remedy for the evils referred to, but taking as much bodily exercise and out-door recreation as possible. It is quite a mistake to consider the labor of the day as equivalent to exercise. Work, *of any kind*, is a mere routine process, carried on with but little variety of circumstances, and a mere change of scene and air is beneficial. To derive the greatest amount of benefit from exercise, it should be combined with amusement, and thus a botanic and rural hunt is both pleasurable and recreative. If this important fact were borne in mind by parents, teachers, and employers, much fewer would be the victims to licentiousness, drunkenness, and disease. Athletic sports and out-door exercise, of every description, are no less conducive to the morals and happiness, than they are necessary to the perfect health of the young of both sexes. Wherever there is physical depression, there *must* be a disposition to resort to the injurious mental, moral, or physical stimulants.

If your business confine you from eight till eight, or six till six, there is still time left before and afterward. Have that to yourself, and spend it in walking in the air, and where you can get as far from town or narrow streets as possible. There are thousands of people whose only complaint is want of exercise. A bloated paunch may, by exercise and abstinence, be rendered spare and elegant. The "city 'prentice," the youth, or the young gentleman, all of whom service, restraint, or indolence forbid stepping beyond certain limits, scarcely can it be called in and out of bed, what would they not derive from a couple of hours daily walk in the fresh air? The pale face, bloodless lips, and sunken eyes of many a young maiden also might be restored to roseate health, by an hour or two's morning walk; and how it behooves fathers and mothers to insist upon their daughters, that need it, doing this, if the young ladies have no faith in the means themselves!

Our time should be thus distributed: *Eight hours' rest, ten hours*

application to our engagements, studies, worldly duties, etc., and the remaining six to health and recreation.

This is a good division where practicable. The flesh-brush, horse-hair gloves, soft and hard brushes, a good coarse towel to rub the body with, or friction of the same with the uncovered hand, are severally recommended. I am a believer in the usefulness of each variety; but I give preference to the latter, the use of the hand; and I advise its application, local and general. Friction of the stomach and belly, in cases of torpid liver, distended bowels, or a morbidly irritable stomach, is of great service. It will not, however, suffice merely to rub the hand over the belly half a dozen times. The bowels, liver, and stomach, may be regularly kneaded many times every day; the easiest times certainly are before rising and on going to bed; but the best time is between meals, when the food is all but digested. In young and delicate persons, friction of the entire body is highly serviceable, and it is no bad additional morning and evening amusement for an adult to use the *hair-brush*, or the flesh-brush, or the hand, which is the best, over legs, arms, and the entire body. The advantages of this process are, that it can be done without assistance; but with elderly and infirm people a rubber or brush is indispensable. The result will be that all the digestive organs will be excited into something like action. Where exercise is forbidden, by involuntary confinement or other causes, friction supplies its place; but it must be continued all the year round, and should be persevered in night and morning, from five to ten minutes, more or less, each time. The stomach receives thereby a glow which diffuses itself over the entire abdomen; and I have known cases of constipation, or costiveness, most agreeably relieved by these.

The use of dumb-bells is salutary, lifting light weights, the "Health-lift," suspending the body by the hands, swinging, skipping, etc.

In short, whether you be man or woman, boy or maiden, old or young, move about and take exercise in the best way you can, and as much "unhoused" as possible. Exercise is positively a virtue; and "virtue is," as the school-boy's copy-book has it, "its own reward."

EXERCISE ON HORSEBACK.

NOTHING can exceed the value of this exercise. Nature made man to be moving, as birds are made to fly; and it is unnatural not to use the powers we are supplied with. Walking is preferable

to any other action except riding on horseback, where every muscle is brought into play. In consequence, the blood circulates with greater force and rapidity; and so long as we do not excite the same too powerfully, so long may we walk and move about, short of fatigue. Horse exercise is sanitary and recreative. Healthy, from securing thereby abundance of exercise — getting over distances, and far into the country; procuring thus fresh air and mental occupation, and of an agreeable kind. It strongly behooves all dyspeptics, to whom time is an object, and who, beside, may not be strong enough to walk two or three miles, to exercise upon horseback daily. The anxious man may plead expense as a hindrance; but surely the hiring might be substituted in that case for purchasing; more, also, is made of the latter than need be. Seventy-five or one hundred dollars will be begrudged for a horse; whereas the same money will be spent in a feast, or parted with in incautious credit, or laid out for some little unnecessary extravagance. Many a man has to reflect, that it would have been better for him to have bought his horse, than to have done so and so with his money.

Where circumstances will not permit you to ride on horseback, and walking is the only means of exercise which you possess, pray, my friend, be you invalid or otherwise, do not *stick* in-doors all day, but make an effort and get over, by gentle, or brisker efforts, some two or three miles a day.

RULES TO ADMINISTER MEDICINE.

Suppose the dose for an adult to be one dram:

A child under 1 year will require but one-twelfth, or 5 grains;

2 years,	one-eighth, or 8 grains;
3 years,	one-sixth, or 10 grains;
4 years,	one-quarter, or 15 grains;
7 years,	one-third, or 1 scruple;
13 years,	one-half, or ½ dram;
20 years,	two-thirds, or 2 scruples.

A person above 21 years, the full dose of one dram.

A person of 75, the inverse gradation of the above.

This is an excellent table for regulating the Doses of Medicines: a Mixture, Powder, Pill, or Draught, may be proportioned to a nicety by attention to the above rules.

TO MEASURE MEDICINE INSTEAD OF WEIGHING.

A dram of any substance that is near the weight of water, will fill a common tea-spoon level full. Four tea-spoonfuls make a table-spoonful, or one-half of an ounce. Two table-spoonfuls, an ounce, and so on. On the same principle, one-third of a tea-spoonful will be one scruple, or twenty grains in weight.

The doses of medicines recommended for an adult, or grown person, may be varied to the age of the patient, according to the following rule:

Two-thirds	of	the	dose	for a person from fourteen to sixteen;
One-half	"	"	"	seven to ten;
One-third	"	"	"	four to six;
One-fourth	"	"	"	three years old;
One-eighth	"	"	"	one year old.

LIQUID MEASURE.

A table-spoonful	contains	Half an ounce;
A pint	"	Sixteen ounces;
A teacup	"	One gill;
A wine-glass	"	Two ounces;
A tea-spoonful	"	Sixty drops;

Four tea-spoonfuls are equal to one table-spoonful.

DRY MEASURE.

A table-spoonful	contains	Four drams, or ½ ounce;
A tea-spoonful	"	One dram;
A tea-spoonful	"	Sixty grains.

For a child of two years old, eight grains; and for one a year old, five grains, or one-twelfth as much as for a person of middle age.

Women, in general, require smaller doses than men, owing to a difference in size and constitution.

TABLE OF DOSES FOR CHILDREN.

AS a general rule, if the dose for a grown person is a tea-spoonful of any fluid medicine, half may be given to a child seven years old; one-fourth to one from three to five years of age; and one-eighth

to a child of one to three years; and one-sixteenth to a child under one year.

In the same proportions it will be safe to give children any medicines which are in the form of powder. There are exceptions to this rule, however, a few of which may be named.

Calomel * to a grown person is given as a purgative, in doses of ten grains. To a child less than one year, three grains, which, it will be perceived, are in greater proportion. And so of Anodynes, such as Laudanum, Paregoric, Bateman's Drops, etc., which require great caution in their use.

Laudanum for grown persons,.....20 to 30 drops.
For a child one year old, ... 2 or 3 drops.
(or even four or five, if there be much pain)

Castor Oil is another example.

To a grown person, we ordinarily give one ounce or two table-spoonfuls. To a child of two years old, half an ounce or one table-spoonful. To a child under one year, a quarter of an ounce or two tea-spoonfuls.

The Doses of Medicines should always be weighed or measured, not guessed at. It is always advisable to have in a family a graduated glass measure for liquids, which can be purchased at any drug store, which gives the minims or drops, drams, and ounces.

Sixty drops are considered equal to a dram. A common-sized tea-spoonful is considered equal to a dram, and a table-spoonful to half an ounce. A set of apothecaries' weights should be kept for weighing powders; in the country, where drugs can not be readily procured, they are highly useful.

MEDICAL SIGNS.

Twenty grains make one scruple, ℈j.
Three scruples, or sixty grains, one dram, ʒj.
Eight drams, or 480 grains, one ounce, ℥j, or oz.
Twelve ounces one pound.

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*Calomel.—Though we have occasionally spoken of Calomel in the foregoing pages, as well as that other preparation of Mercury, the Blue Pill, in connection with the treatment of disease and the formation of medical preparations, yet we do not recommend their use, at least internally, in any case whatever. Indeed, we advise one and all not to use them. There is no necessity for it whatever. Discoveries and experience of late years have amply demonstrated that we have in the Vegetable Kingdom herbs, roots, barks, and remedies sufficient for all the diseases to which man is subject, of far more efficacy than the Mercurial and other Mineral preparations, and free from any of their deleterious effects.

ON THE DISEASES

OF THE

HUMAN BODY, AND THEIR CURE.

BY JOHN C. GUNN, M.D., AND JOHNSON H. JORDAN, M.D.,

REVISED AND ENLARGED.

PHYSICIAN AND PATIENT.

WE have no remedies of a secret nature, no occult arts of preparing or combining them so as to increase their virtues. All that we know can be learned by any one who chooses to spend the time and take the trouble requisite for mastering our art.

There is, no doubt, still manifest a slight tendency here and there to credit us with the possession of mysterious power to control disease, but there is no excuse for this. Whenever naturally self-reliant enthusiasts act as if they were really the fortunate possessors of a power of detecting and controlling morbid processes that was not to be acquired by other men, the advance of medical truth will be retarded. In every age self-confidence has commanded faith and devotion, and with the aid of these the evolution of the extraordinary and marvellous from the ordinary and intelligible is not difficult. I should feel sorry if I should discover that any of my pupils had deviated from the right path, as some who have studied medicine have done—seeking to make people believe they possessed powers and influences over disease which they did not possess. So terrible a falling away from the high standard handed down to us would be a sad disgrace, and is most painful to contemplate.

If you go into practice fresh from the wards and the pathological department, and at once undertake the treatment of sick people,—if you pass from the investigations of important structural changes to the practical consideration of functional disturbance, and especially if you look too exclusively from the purely scientific standpoint, you will meet with many things that will puzzle you. The patients you treat will not be satisfied, and you will be disappointed and annoyed, because they are not contented with the advice you give. Perhaps you will feel, in consequence, out of heart or thoroughly disgusted with practical professional work.

It has been said that the physician should be a consolation to the patient, but many a physician, fresh from the study of severe forms of disease, would afford poor comfort to a dyspeptic, or to a person suffering, say, from functional nervous disturbance, and would hardly know what to say to one in whose body he could discover no actual disease of tissues or organs.

Medical advisers of purely anatomical and pathological habits of mind are certainly apt to disappoint, or even offend, unscientific patients, and, without deserving it, gain for themselves the unenviable reputation of being thoughtless and unkind—regardless of others' suffering, and, if not objectionable, very far from agreeable, ministers of relief. People do strongly object to follow the advice of such advisers, however correct it may be; and perhaps the least unfriendly among the patients of such a doctor would, out of kindness and in the most quiet and confidential way, recommend him as soon as possible to change his vocation.

If the patient's malady is, unfortunately, ever so intractable or incurable, he will be much more grateful to you for your attention, and for doing what you can to relieve him, than he would be if you favored him with the most learned and elaborate disquisition concerning his case. You will generally find that if a man has a pain in his stomach, especially if accompanied with excruciating spasm, he will not be satisfied with the assurance that he will be better when the wind is dispersed. However interested we may be in studying the natural history of disease, the patient desires assistance to disperse wind that torments him, and wants remedies which will relieve his sufferings as soon as possible. Such a patient is not more unreasonable than most doctors themselves would be under similar circumstances. If you know your work, you can be of use in relieving the pain. If, from ignorance of the use of simple remedies, you tell the patient that nothing can be done, the chances are that he will go to some intelligent person, professional or non-professional, who may, perhaps, give him a dose of Bicarbonate of Potash or some Sal Volatile. He is at once relieved, gets well in the course of a few hours, and loudly praises the adviser of the successful treatment.—*Prof. Lionel S. Beale, M. D.*

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FIRST DIVISION.

DISEASES OF THE SEPARATE ORGANS.

DISEASES OF THE ORGANS OF NUTRITION (THE STOMACH AND BOWELS).

INFLAMMATION OF THE STOMACH.*

INFLAMMATION OF THE STOMACH does not occur very often as an independent or primary affection, but is usually the result of or connected with some other disease.

CAUSES. — Caustic and irritating substances taken into the stomach, the corrosive mineral poisons, and some vegetable poisons, often prove fatal, by causing inflammation. The habitual use of alcoholic drinks very often produces the disease, and where there is a predisposition to it, even eating to excess. Drinking large quantities of cold water is also among the causes. Hot water is often useful.

It is very liable to occur in the course of some fevers, especially Bilious and Yellow Fevers, and sometimes during the Small-pox and Measles.

SYMPTOMS. — In severe cases there is a burning pain in the stomach, with constant nausea and vomiting, and great desire for cold drinks. The pain is increased by pressure on the stomach and by a deep inspiration. The patient can not bear warm drinks — they are instantly thrown up; and even cold water, if much is taken, soon produces distress, by distending the stomach. The tongue is either red at the tip and edges, with a whitish fur in the middle, or is red all over. The bowels are always constipated, unless they are also inflamed. The pulse is frequent, small, and corded. Breathing short and hurried; skin hot and dry, and the urine high-colored. The patient prefers to lie on his back, with his legs drawn up, is low-spirited, restless, has a feeling of extreme debility, with an expression of countenance indicating anxiety and distress.

If the disease continue to advance and grow worse, the tongue

* See *Eighth Division*, for chapter on the Mucous Membrane, etc.

becomes smooth, red, and dry; the skin becomes cool and pale; pulse more frequent, feeble, and thread-like; the body becomes much emaciated; debility and restlessness increase, and delirium sets in Hiccough, vomiting of dark-colored matter, cold extremities, or a complete cessation of pain, without improvement in other respects, are to be regarded as fatal symptoms. In the milder forms of the disease, of course the symptoms will be of a milder character also. Instead of severe burning pain, there may be but a feeling of unusual warmth and constriction in the stomach, and instead of incessant vomiting, but a slight nausea, and so on. The disease varies in duration from two to six weeks, and may then subside into the chronic form. Milder cases generally soon yield to proper treatment; but if neglected may run on for weeks, and then terminate in a lasting chronic disease.

Treatment. — Here is a case in which it will not do to give emetics. Every thing calculated to irritate the stomach, whether food, drink, or medicine, must be withheld. The bowels must be opened, and if it can not be done by giving cathartics, it must be done by injections. Oily substances will generally be retained. Equal parts of Castor Oil and Sweet Oil, with a portion of Magnesia, can be given in table-spoonful doses, repeated hourly till they operate, or five or six doses are taken.

I have often found the following to be an admirable preparation as a cathartic in this disease: 5 or 6 grain doses of the Neutralizing Physic, with ½ grain of Podophyllin and 1 grain of Ipecac in each dose, given in a spoonful of cold water, once every two hours, till six or eight doses are taken, or an operation produced. To prepare the Neutralizing Physic, see Table of Family Medicines and Recipes. If the stomach will not retain this, omit the Neutralizing Physic, and give the other two, in the quantities named, in half a spoonful of cold water.

Apply a large Mustard Plaster over the stomach, until a powerful impression is produced. It is well to make use of injections, and it may be well to give from an eighth to a fourth of a grain of Morphine occasionally — not oftener than once in two hours.

But you must rely principally upon external applications. After the Mustard has been taken off, apply constantly over the stomach flannel cloths, dipped in a hot infusion of hops boiled in vinegar and water, or in hot water alone. Continue this for hours. Bathe the feet and legs in warm lye-water, and apply hot bricks to the patient in bed. Repeat the Mustard Plaster occasionally.

Give mucilaginous drinks, as Gum Arabic Water, and infusion of Slippery Elm, or Marsh-mallow, cold, and a little Lemonade.

CHRONIC FORM.

When this disease becomes chronic, the digestion will be bad, with sour stomach, flatulency, heaviness and oppression after

eating, belchings, and more or less pain and soreness in the walls of the stomach The stomach seems to be tense, and sore to the touch; the soreness is usually confined to one spot, and is of a stinging character. The appetite is more or less impaired, and there is often nausea. The bowels are generally very costive; but sometimes a mucous diarrhea occurs. Ardent spirits, or stimulants of any kind, taken into the stomach, produce a burning sensation, and also a redness on the surface, especially the face. The tongue is usually clean, or a brown fur in the middle, smooth, and of a bright red, with pimples on it somewhat like the granulations of the strawberry.

Chronic inflammation of the stomach usually results from the acute form; though it is sometimes chronic from the start, and often results from the use of liquors and other stimulants.

Treatment. — In the treatment of this form of the disease, almost every thing depends upon proper diet. Nothing but the blandest and least irritating diet should be used. If the disease borders on the acute form, with slight feverish symptoms, mucilaginous articles, as Tapioca, Sago, Arrow Root, Gum Arabic, and Elm Bark, and decoction of Barley, should be used. If there is no fever, and not much debility, a more nutritious diet may be used, as Boiled Rice, Stale Bread, Crackers, Mush and Milk, and Gruels. Milk is an excellent thing, and cases have been cured by living for a while on bread and milk alone. The addition of a little lime-water makes it still better. Alcoholic and stimulating drinks, coffee, and the like, are to be avoided.

Costiveness must be prevented or overcome by the use of laxative and mild cathartics. This may often be done by the use of bread made of unbolted flour, cracked wheat, or oatmeal porridge.

An irritating plaster worn over the sore part of the stomach will also do good.

When there is evidence of ulceration of the stomach, a pill should be given twice a day, composed of 3 grains of Extract Hyosciamus and 1 grain of powdered Sulphate of Iron (Copperas), with ½ grain of Ipecac, continued two or three weeks, or until relief is obtained. Bathing the whole surface and rubbing with a coarse towel should also be employed daily.

BLEEDING FROM THE STOMACH.

THIS disease is generally known as vomiting of blood, and consists in a discharge of blood by the mouth, usually in considerable quantities, attended with vomiting.

CAUSES. — It may be caused by blows on the region of the stomach,

or any thing that will produce too great a determination of blood to that organ. It may also arise from ulceration of the stomach. Usually, perhaps, it arises from debility and relaxation of the blood vessels of the inner coat of the stomach. It is sometimes brought on by suppression of the Menses.

Bleeding from the Stomach may be distinguished from that of the Lungs by the discharge being preceded, usually, by a feeling of weight, pain, and anxiety, in the stomach, and unaccompanied with cough. The blood is discharged by vomiting, and in a greater quantity than when it comes from the lungs. It is also of a darker color, and is usually more or less mixed with the ingesta or food.

Treatment. — If the affection seems to be but slight, a few doses of common Table Salt and Vinegar may be sufficient to suppress it. Alum Water may also be given. If these fail, give a strong tea of the Beth Root. The Bugle Weed is also good — a strong tea made from its leaves, to be taken cold at different times during the day.

If it arise from suppressed Menstruation, measures must be taken to restore that discharge. A decoction of the Vervine Root should be given three or four times a day, a purgative of the Mandrake Root, and such means employed as will be calculated to divert the blood from the stomach to the extremities and surface. Bathe the feet and promote perspiration.

HEART-BURN.

WHAT is commonly called Heart-burn, is nothing more or less than Sour Stomach, or acidity of the stomach. It is usually a concomitant of Dyspepsia or Indigestion, frequently caused, however, by the use of tobacco, spirituous liquors, and want of proper exercise. Temporary relief may generally be had by the use of some alkali or antacid — as a tea-spoonful of Supercarbonate of Soda in a little water, or half as much Saleratus dissolved in half a tea-cupful of water. Great care should be taken to avoid the use of these articles continuously, or even frequently, as they tend to irritate the coats of the stomach. Avoid the causes that lead to Heart-burn.

Treatment. — Magnesia is a very good remedy; the dose may be 1, 2, or 3 tea-spoonfuls, in a tumbler of water. If caused by the use of Tobacco, leave off the filthy weed.

Women are often troubled with Heart-burn and Sour Belching during pregnancy. In such cases it is an attendant symptom, which can only be temporarily relieved while the cause exists. The above alkalies will generally afford relief here also, especially the Magnesia;

but sometimes, as strange as it may seem, acids do the most good — such as a weak solution of Tartaric, Lemon, or Citric Acid, or a few drops of Elixir Vitriol, in a little water, just enough to make it pleasantly sour; or Lemonade will answer the purpose.

Sugar, sweets, and saccharine vegetables, such as easily turn sour in the stomach, should be avoided, and the patient should take free exercise daily, and make use of a plain, light, nourishing, and easily digested diet. And if Dyspepsia is the cause of the difficulty, the Anti-Dyspeptic Pills should be taken, one an hour before each meal, and the Dyspeptic Lye also used whenever the stomach becomes sour. Or the following powder may be used:

Take pulverized Rhubarb and Supercarbonate of Soda, of each, 1 ounce; pulverized Golden Seal and Peruvian Bark, of each, ½ an ounce; pulverized Cloves and Ginger, of each, 2 drams. Mix, and take a tea-spoonful after each meal, in a little water or milk.

WATER-BRASH—PYROSIS.

WATER-BRASH, or Pyrosis, is the accumulation of a watery fluid in the stomach—sometimes acid, when it is attended with more or less burning pain, similar to Heart-burn, but frequently it is quite insipid, and sometimes viscid or ropy, like the white of an egg. It gives rise to more or less belchings or eructations. It is owing to a derangement of the stomach and function of digestion.

Various remedies are used for the Water-Brash. The Alkalies recommended for Heart-burn, especially if there is acid or burning in the stomach, will generally give temporary relief. But to effect a cure regulate the diet carefully, and take such medicines as will be calculated to overcome and remove the cause. For this purpose the following may be found effectual.

Treatment.—Take Senna leaves, 1 ounce; Jalap, Golden Seal, and Fennel Seeds, of each ½ ounce, powdered; Aloes, 2 drams; Balsam of Tulu, 1 ounce; put all into a bowl or tin cup, and pour on ½ pint of boiling water, or enough to cover them, stirring at the same time; when cold, put all into a bottle, and add 1½ pints (or enough to make 2 pints of liquid altogether) of good Brandy or Whisky. Let stand twenty-four hours, when it will be fit for use. Take a table-spoonful of this every morning, before breakfast; and should this not give sensible relief in a few days, take it oftener, that is, twice a day, or in larger doses. But always take one dose early in the morning. This is an excellent medicine, being tonic, laxative, carminative, and strengthening and stimulating to the digestive organs. It is a good remedy for Dyspepsia also. The patient should avoid greasy food, fat meats, and the like; but may possibly use pepper, mustard, and salt, in very moderate quantities, and often may find relief in the use of such fresh fruits and acids as tend to generate healthy gastric juice, and give tone to the stomach.

DYSPEPSIA.*

THE greater number of persons afflicted with Dyspepsia are to be found among care-worn speculators, stock-brokers, merchants, and ardent students, with those confined to sedentary habits, who neglect or have no opportunity to take sufficient exercise, and thousands are afflicted with it from too constant use of medicines, and whose nervous systems are easily excited; those also who are addicted to the use of stimulating liquors, improper food, tobacco, etc., and not unfrequently those whose nervous systems have, by injudicious training, been too greatly developed, and rendered readily excitable.

There can be no doubt that sedentary habits concur with mental excitement in producing this disease, but as long as excessive mental excitement is kept up, little relief can be obtained by medicine, or the strictest attention to diet. Absence from mental toil, cheerful company, exercise, a country excursion, and relaxation of mind, will soon accomplish a cure, when medicines and all the prescriptions of physicians would prove unsuccessful without it.

The effects of mental excitement, or disquietude, in producing Dyspepsia, are greater than is generally supposed. It is well known that persons in good health, of sound digestive organs, who take plenty of exercise, and are free from anxiety of mind, may eat almost any thing, and in quantities which, under different circumstances, would do serious injury.

Dr. Beaumont, surgeon of the United States Army, as our readers may recollect, was the medical man under whose care fell the case of Alexis St. Martin, a young Canadian, who received a gunshot wound in the left side, in consequence of which was formed a permanent opening into the stomach, affording a most admirable case, and the only one ever known, for examining the working and whole process of digestion. I give you the case in language so perfectly familiar that it will be readily understood. With honorable zeal, Dr. Beaumont took advantage of the chance thus held out, and at large expense retained the man beside him, for the purpose of prosecuting a series of experiments on the exposed organs of digestion, which prove the perfect identity of digestion with chemical solution. The gastric juice, removed and put into a phial, was just as successful in reducing food to chyle, as when left to operate in the stomach. As digestion consists essentially in a solution of the aliment in gastric juice, it follows that whatever promotes the free and healthy secretion of that juice, will favor digestion; and, on the contrary, whatever impedes or impairs it, will impair or impede the digestive pro-

* See the new article on "*Pepsin for Weak Stomachs*," also that "*Of the Tongue.*"

cess. It thus becomes important to ascertain the conditions under which the juice is secreted most freely and healthily.

The circumstances under which Dr. Beaumont obtained this gastric juice, of healthy quality and in large quantity, from St. Martin's stomach, and which consequently may be considered as most favorable to digestion, were moderate and regular living, due exercise in the open air, cheerful activity of mind and feeling, and dry, bracing weather. After excesses, on the contrary, in eating or drinking, bodily fatigue, passionate excitement, temporary irritation of disease, or in damp weather, the secretion was generally impaired both in quality and quantity.

If, as there is every reason to believe, the gastric juice, or secretion, is naturally proportioned to the real wants of the system at the time, it is very easy to understand why it is most copious after moderate and regular living, and least so after intemperance.

When a moderate meal is eaten, a sufficiency of juice is speedily secreted for its solution, digestion goes on rapidly, the coats of the stomach retain their usual healthy appearance, and after an interval of repose, a fresh supply of juice is ready to be poured out when wanted for the digestion of the succeeding meal. Of these facts Dr. Beaumont had ocular evidence. But when food is eaten to excess, the portion left undissolved by the gastric juice begins to ferment, and by its physical and chemical properties acts as a local irritant, just as any foreign body would do, and produces inflammatory action on the inner coats of the stomach, which necessarily interferes with the gastric secretion, and impairs the power of digestion.

From the relation which Dr. B. believes to subsist between the quantity of gastric juice which the stomach can secrete, and the actual wants of the system at the time, it follows that the powers of digestion vary considerably under different circumstances, even in the same individual. In youth, and during convalescence from illness, and after much exercise, when copious materials are required for both nutrition and growth, the gastric secretion seems to be very abundant, and hence the vigorous appetite, and easy digestion of early life. But after maturity, when the living fabric is complete, and when the restless activity of youth is exchanged for the staid and comparatively sedentary pursuits of middle age, when no such abundance of nutritive materials is required, the secretion of gastric juice is, in all probability, much diminished, and is the chief cause of the proportionally diminished powers of digestion.

Keeping the above relation in view, we ought, on the approach of maturity, to place ourselves in accordance with our altered circumstances, and diminish our food, more or less, according to circum-

stances, adapting our mode of living to our sedentary habits, diminishing in due proportion between supply and expenditure, which alone is compatible with the continuance of health. This precaution is very generally neglected. Retaining a lively sense of the pleasures of a youthful constitution and digestion, the grown man changes his habits, but continues his meals, and when he feels the accumulating weight of excess pressing more and more heavily upon him, instead of taking the hint, and restricting himself to what he requires, he begins to bemoan his weakness of stomach, and to wonder why he, who once never felt that he had a stomach, should now become a martyr to its complaints. From an extensive practice, I am confident that a large proportion of the severe dyspeptic cases which occur, in what are considered regular living men, between twenty and forty years of age, are fairly attributable to this cause, and might be avoided by the exercise of rational foresight. I have known several who have suffered severely in this way for years, lament sincerely the ignorance which betrayed them into this error.

There are many persons, perhaps constitutionally, too devoted to intemperance to be controlled by any such considerations; but there are many misled, less by the force of appetite than by ignorance, who may profit by the remark. The other conditions, most influential in diminishing the secretion of the gastric juice, are bodily fatigue, strong mental emotions, such as anger and febrile excitement. Hence the necessity of avoiding full meals under such circumstances, and never eating a second meal until the stomach has had full time to recover from the labor of digestion — for it requires an interval of repose just as the muscles do.

In febrile attacks, the coats of the stomach were often observed, by Dr. Beaumont, to present a somewhat dry and inflamed appearance, followed sometimes by an irruption of whitish vesicles. In this state the gastric juice is generally sparingly secreted, and somewhat altered in quality. Hence impaired power of digestion, and the generally impaired appetite in fever, and the folly of giving solid food, which serves only to increase the irritation and impair still further the already diminished gastric secretions. In many slight fits of indigestion, appearances of this kind presented themselves, and were easily removed by a short abstinence and a little laxative medicine.

Many persons, who obviously live too freely, protest against the fact, because they feel no immediate inconvenience, either from the quantity of food, or the stimulants in which they habitually indulge, or, in other words, because they experience no pain, sickness, or headache — nothing, perhaps, except slight fullness and oppression, which soon goes off. Observation and facts show, however, that the con-

clusion drawn is entirely false, and that the real amount of injury is not felt at the moment — merely because, for a wise purpose, nature has deprived us of any consciousness either of the existence or state of the stomach during health. In accordance with this, Dr. Beaumont's experiments prove that extensive erythematic inflammation of the mucous coat of the stomach was of frequent occurrence in St. Martin, especially after excesses in eating and drinking, even when no marked general symptoms were present to indicate its existence. Occasionally febrile heat, nausea, headache, and thirst, were complained of, but not always. Had St. Martin's stomach and its inflamed porches not been visible to the eye, he too might have plead that his temporary excess did him no harm; but when they presented themselves in such legible characters that Dr. Beaumont could not miss observing them, argument and supposition were at an end, and the broad fact could not be denied.

These experiments, made upon himself unintentionally, by St. Martin, occasioned by fits of intemperance, show the effects of ardent spirits upon the coats of the stomach, and afford an instructive lesson, to all who are willing to receive and enforce it, that nature is not to be outraged and its functions disturbed by the use, or rather abuse, of spirituous liquors, or by eating to excess, as must be seen by my readers, whose attentive consideration is invited.

The very acrid nature of the contents of the stomach, occasionally witnessed during the existence of the eruption, as seen in St. Martin, is a proof at once of a great disturbance in the function, and of the necessity of avoiding every thing but the mildest nourishment, until health is restored. It is quite common, however, for a patient, immediately after complaining of the acrimony of the last meal, to sit down to the table and eat as heartily, of all sorts of food, as if the stomach were in perfect health. This case fully and conclusively shows why this can not be done with impunity.

The gastric juice is essential to digestion. It is caused to flow into the stomach as soon as any substance is introduced into that organ, whether it is a piece of leather or a beef-steak. This juice contains an acid, and the more indigestible any article of food is, the greater amount of sourness does the gastric juice contain; hence, when persons eat something that does not agree with them, and is not easily digested, they say it soured on the stomach, or complain of heart-burn. The use to make of this is, whatever article of food eaten is followed by sour stomach or heart-burn, that article is hard of digestion and ought to be avoided altogether — at least it should be taken in diminished quantity; but do not forget that different stomachs bear different things, and what disagrees with you to-day may agree very well

next week or next month, and that the stomach must be humored, however fickle it may seem.

Sometimes, however — shall I not say nearly always? — people eat so much that there is not gastric juice or acid enough to digest the food, then it ferments, produces belching, colicky pains, sick stomach, and the like; therefore common vinegar, which has more of the properties of the gastric juice than any other substance, is often used to very great advantage, especially by those persons who have weak digestive organs, to aid the stomach in digesting articles which are known to be difficult of digestion.

The principal and general causes of Dyspepsia, and the whole train of distressing complaints resulting therefrom, are produced from the present fashionable habits of luxury and intemperance, both in eating and drinking, such as spirituous liquors, high-seasoned meats, excessive use of tea and coffee, hot bread, spices, pastry, tobacco in every form, irregular evacuations, excessive venery, swallowing the food without chewing it sufficiently, overloading the stomach, derangements of the liver and spleen, want of exercise and pure air, the depressing passions, or great anxiety of the mind, and whatever has a tendency to debilitate the lining of the stomach, so as to prevent it from the healthy performance of its functions.

This disease may well be regarded as one of the most distressing with which we can be afflicted; for while it gradually attacks the constitution of the patient, it undermines the enjoyment of all domestic comforts whatever, even changing greatly the *dispositions* of its numerous victims. And it must be borne in mind, that all irregularities of living will sooner or later destroy the digestive powers; and the further we recede from a state of nature, and the greater the luxuries we indulge in, the further are we from the felicity which springs from the enjoyment of health, and the more do we suffer from the derangement of the stomach. People in cities, whose minds are distracted with a pressure of business, and who are forced to great irregularity in sleep and eating, are peculiarly liable to Dyspepsia. Farmers and their wives and children, who live in the country, who labor daily, never hurry, sleep sound at night, and eat wholesome articles of food, and who drink cold water, or very weak tea and coffee, are seldom affected with it. In the country, milk is the drink of children, instead of tea and coffee, which, no doubt, contributes greatly to strengthen and fortify the stomach against disease. I have known Dyspepsia to make its appearance among country people, but this disease is very rare with them. It is most generally confined to the inhabitants of towns and cities, where luxurious living and sensual pleasures are indulged in, and

where irregularities are the cause of this distressing complaint, and often accompanied by diseases of other parts of the system, particularly of the liver and brain, which in turn react upon the stomach, giving rise to an aggravated form of this disease, which, in some instances, ends in an affection of the lungs, cough, and all the symptoms of hectic Fever. This termination of the disease always makes it of the highest importance to cure it in the early stage, or when it first begins. If taken in season, and properly treated, Dyspepsia is as curable a disease as any; but if suffered to go on with little or no attention, and without any alteration of the manner of living, or avoidance of the causes which produce it, there is no disease more difficult to cure.

Symptoms. — The following are the most common and constant symptoms of this complaint, namely: want of appetite, indigestion, and a sensation as of great internal *sinking* and distortion of the stomach, flatulency or wind in the bowels, acid eructations or throwing up acid water, nausea or sickness of the stomach, and frequently vomiting up your food, pain, and not unfrequently spasms, extending over the region of the stomach, great depression or lowness of spirits, irritability of temper, very nervous and easily excited, anxiety, whitish or clay-colored evacuations from the bowels or intestines, which are sometimes in a loose or relaxed state, at others in a costive state, not unfrequently afflicted with piles and discharges of blood from the fundament, alternate flushes of heat and cold, irregular, wandering pains in the back and shoulders, twitching or spasmodic affections of the muscles, nervous twitchings and tremblingly alive all over to every sense of danger, real or imaginary, great restlessness and want of sleep, sudden startings at the slightest unexpected noise, frequent sighing, a sense of great oppression about the region of the heart with palpitations, skin dry, tongue furred, unpleasant taste in the mouth, offensive breath, yawnings, and uncomfortable feelings, often a giddiness, and noises or singing in the ears, sight frequently obstructed, the memory not so good as formerly, want of resolution, great weakness after any corporeal exertion.

Treatment. — In the beginning of Dyspepsia, strengthening medicines should not be used, but after the disease has impaired the general strength, and relaxed or weakened the stomach, it will be necessary to use them. I have had much experience in this disease, and have found that acidity and hot belchings may be removed by a gentle emetic of Ipecacuanha, from 5 to 10 or even 20 grains, in a tea-cupful of warm herb tea; Chamomile is very good. The emetic should be repeated when a small dose has been given, if the first dose does not vomit; but generally the first dose is sufficient. When the operation is over, and the stomach has become quiet, give a gentle

purgative, a Seidlitz Powder; but if the bowels are very constipated, or bound, give some more active medicine, as Cook's Pills. For children a dram of powdered Rhubarb, and the same quantity of calcined Magnesia, divided into four equal parts, one stirred up in syrup and given morning and evening, will effectually relieve the digestive organs from sourness and wind colics, with which young persons are so much tormented. I have said there are two stages of this disease, one when irritation or inflammation has subsided, and the complaint has become one of a chronic nature, and requires tonic or strengthening medicines to improve and strengthen the digestion. In the first stage remove the load or oppression, then improve or strengthen the stomach, or digestive organs. Keep the bowels regular, for they are generally sluggish and costive. A daily habit of attending to the natural calls of the bowels, however feeble the desire, should never be neglected. A long retention of the stools is attended with the same weakening effects as a retention of urine in the bladder, by neglecting to attend regularly to the time that nature dictates.

The use of injections is, in severe cases, or delicate persons, or those of long standing, much better for moving the bowels, than by swallowing daily potions of physic, and, for this purpose, all that is necessary is Molasses and Warm Water; or Warm Water, in which put a tea-spoonful or two of common Salt. Every family should be provided with a Self-injecting Pipe, which can be purchased at any drug store, as it saves the taking of a great deal of physic, prolongs life, and wards off diseases which are brought on by destroying the stomach with active purgative medicines.

In the beginning of the disease, as I have before told you, when the symptoms are mild, there is no necessity for taking a great deal of medicine. Attend to the quantity and quality of your food; avoid all dissipation; secure sound sleep; take plenty of exercise, and, perhaps, take a Soda Powder, two or three times a day, in a tumbler of cold water. This will correct sourness of the stomach, and if the bowels are bound up, take a Seidlitz Powder once or twice a day; if much wind, a little Spearmint or Peppermint Tea, drank warm, will relieve you. If the distress is great, from wind or colic, a tea-spoonful of Paregoric, in a little hot water, should be taken. If the suffering arises from the quantity or quality of food, then take a dose of Salts, or a gentle emetic. But after a fit of indigestion, where the stomach has suffered much from wind, pain, heart-burn, and hot, sour eructations, or perhaps sickness and vomiting, then give the stomach rest for twenty-four hours, living on Boiled Rice, Hard Crackers, Rye Bread, and cooling light diet, or such food as may be most suitable to assist the powers of digestion. If there is a constant feeling of soreness and pain at the pit of the stomach, a large blister should be drawn--as small blisters are of no service — and if the pain continues, and no relief is produced from the blister, half a dozen Leeches should be applied to the pit of the stomach, every two or three days, until relief is obtained. If there is constant costiveness of the bowels, a good medicine is Aloes, unless you have the Piles, then you must

not use it, otherwise it is valuable; one, two, or three pills, as you may require, on going to bed, to open the bowels, and continue to use them for three or four weeks at a time, if the digestive organs are not strengthened before. I have cured many persons with no other than this simple remedy. In bad cases of Dyspepsia, or where of long standing, you will find the following a valuable remedy, for I have used it with great benefit in many difficult cases:

The Oxide of Bismuth, and Aloes, made into pills, with Molasses, or a solution of Gum Arabic. The proportion is one part of the Oxide of Bismuth, and two of Aloes, made into common sized pills. Four of these pills are to be taken every night, on going to bed, until you find improvement in your digestion, or the stomach is strengthened. These pills are greatly celebrated, and sold as a patent medicine for this disease.

The Oxide of Bismuth can be used alone, in powder of 5 grains at a dose, and in cases where a daily use of physic is not needed, it is better to use it in this way, or you may try both to see which is of the greatest benefit. You may mix the powder with Molasses, or Honey, or any kind of preserves, or syrup.

The White Mustard Seed is my old remedy, and one which may be relied upon. It has cured many cases of Dyspepsia, where costiveness and flatulence or wind prevails on the stomach. It should be taken every day, perhaps, for three or four weeks. The dose is from half to a table-spoonful of seeds, swallowed whole, with cold water. It operates upon the bowels, warms the stomach, and expels the wind.

Rubbing the skin often with a flesh brush, or coarse towel, is beneficial. It arouses the action of the blood-vessels of the skin, awakens its sensibility, and finally draws to the surface a greater amount of fresh blood. It will be of great benefit, half an hour before eating, to knead the stomach well, as if you were using your hands in kneading bread; knead up toward the breast bone, or use brisk friction with a brush or coarse cloth, over the region of the stomach. This kneading particularly invigorates, promotes insensible perspiration, increases the action of the stomach, and consequently its power of digestion.

Exercise on horseback, riding before breakfast, change of place, travel and amusing scenes, all assist to cure Dyspepsia.

The following bitters will be found very valuable: Peruvian Bark, 1 ounce; Gentian Root, 1 ounce; Orange Peel, ½ ounce; Coriander Seeds, ½ ounce; bruise these four articles in a mortar, or with any convenient article if you have no mortar, put them into a quart of the best French Brandy, and let it steep for five or six days before you use it. The dose is from 1 tea-spoonful to ½ a table-spoonful in a wine-glassful of water, about one hour before your meals.

Pills made of Aloes and Myrrh, called the pill *Rufi*, form one of the best pills for the stomach now in use. The Myrrh is slightly stimulating, and very strengthening to the stomach; or you may give the powder of Aloes alone, in a dose of 20 grains, three times a day; or the Sulphate of Iron mixed with Myrrh, in the form of a pill --this is called generally Griffith's Mixture, which has helped

many persons; and this is the reason why the Mineral Waters which contain Iron are so valuable in Dyspepsia of long standing. They are called Chalybeate Springs, and none are superior to the Grayson Springs, of Kentucky; these waters are extremely suitable to this disease, and many cures have been effected by them.

Take Powdered Turkey Rhubarb, 2 drams; Carbonate of Soda, 48 grains; Simple Syrup, 1 ounce; Mint Water, ½ pint; take a table-spoonful three times a day, before meals. This will remove acidity and hot belchings.

Rose Water, 1 pint; Sulphate of Magnesia, 6 drams; Tincture of Cascarilla, 1 ounce; mix. Dose: three table-spoonfuls twice a day.

The following is a valuable preparation, particularly in females troubled with Dyspepsia and the Whites at the same time: Take Tincture of Aloes, 1 ounce; Muriated Tincture of Iron 2½ drams; mix. Dose: thirty drops three or four times a day, in a little water.

Bathe the feet at night in warm water at bed-time, and once or twice a week take a bath in pleasant warm water, rub the body all over well, with a brush or coarse towel, and rub or knead the stomach before going to bed, so as to produce a gentle glow or heat over the whole body. Pure air is of great importance to healthy digestion.

A change of air, such as a voyage to sea, bathing in salt water, or a residence for a time near the ocean, has performed the most wonderful and permanent cures. I knew a clergyman of the Presbyterian church, who was so far reduced that he was carried on his bed to the sea-shore, and after remaining there two months, returned home entirely cured. And I confidently believe, if persons afflicted with this complaint would live exclusively on rice, milk, vegetables, fruit, and hard cold bread, avoiding all dissipation, their health would be restored, and the stomach be entirely renewed.

In closing this important subject, we must impress upon your minds that Dyspepsia, in its more aggravated forms, is a disease which requires, on your part, great patience. Its gradual progress and constant increase require that the means for its removal should be gradual — increasing or diminishing the strength of the remedies as you find necessary. You must assist nature by giving rest to the stomach, by strengthening it, and by mildly keeping the bowels regular (so as to have a passage once a day is all that is required). No complaint requires more constant attention, and not unfrequently the most simple remedies cure; for instance, care, prudence, diet, exercise, and change of air, and every thing which contributes to the health of body and mind, invigorates and strengthens the stomach.

It has been justly said that, when doctors fail, the most simple remedies may effect a cure. This was the case with a delicate young lady who suffered with this complaint, and had tried many remedies without being benefited, when she was advised to eat a small portion of raw onion, three times a day, before meals, which in a few months effected a permanent cure. Then, as it is quite simple, try Halstead's method of kneading the stomach with the hand. It removes the torpid state, and has, if properly done, the effect of regulating the

bowels. Being very simple and easily put in practice, it may be tried with safety, and with great benefit, for I have used it in many cases. In every form of Dyspepsia, coffee, tea, and hot bread are injurious. Black Tea may be used in small quantities.

In the summer time, the shower-bath is very often used with great benefit, followed immediately by brisk friction with a coarse towel. In some cases, the tepid bath may be occasionally of benefit. Where there exists much pain in the stomach or bowels, flannel dipped in vinegar and squeezed, should be applied over the stomach and belly with a heated smoothing-iron until the flannel becomes dry; which may be repeated as often as the pain returns.

Another valuable application, in stomach and liver diseases, is a common Burgundy Pitch Plaster, which you can purchase at any apothecary store for twenty cents. Sprinkle over this plaster a little Tartar Emetic, and apply over the stomach for Dyspepsia, or over the liver for disease of that organ. Let it continue on until hundreds of little pimples appear on the surface of the skin; to be applied and continued, at least at intervals, until the disease is cured. You will find it itch severely. Keep it on until the skin is freely covered; it will remove the inflammation.

Sea-bathing, on account of its stimulative and penetrating power, may be placed at the head of those means that regard the care of the skin, one of the first wants of the present generation, by opening the pores and reinvigorating the whole nervous system. This bathing is attended with two important advantages. The first is, that besides its great healing power in cases of disease, it may be employed by those who are perfectly well, as the means most agreeable to nature for strengthening and preserving health. It may be compared to bodily exercise, which can remove diseases otherwise incurable, and may be used by those who are sound, to preserve themselves in that state. The other advantage is the noble, grand, and indescribable impression made by the sea on those not acquainted with it. It braces up the nervous system, and produces a beneficial exaltation of the whole frame. I am fully convinced that the physical effects of sea-bathing must be greatly increased by this impression on the mind, and that a hypochondriac, or nervous person, may be half cured by residing on the sea-coast for a short time, and enjoying a view of the grand scenes of nature which will there present themselves.

Sea-faring men are peculiarly exempt from Dyspepsia, from their greater simplicity of living, united with exercise, good air, and comparative freedom from the embarrassing cares of city life. All active trades are more favorable to the soundness of the stomach than sedentary employments. The fewer the articles of food we eat, and the greater the uniformity we observe in eating them, the greater will be our chance of escaping this harassing disease.

The human frame is so delicate, that there are few individuals totally exempt from some predisposition to a particular disease, which accompanies them through life, therefore we should strictly attend to, and carefully avoid every thing which may produce disease. Let me

say to you that physical peculiarities are hereditary, and we may trace, in the unconscious infant even, the lines of that care and disease which is ushering the decrepid and dyspeptic parent to the grave. Well may we reflect then how essential to ourselves, and to posterity, is a regular course of living, and sound health.

The constant murmur of the waves of the sea tends to soothe the brain and promote profound sleep. The nervous headache, to which most weakly persons are subject from indigestion, bad blood, or defective circulation, is frequently entirely removed by the refreshing air of the ocean. Walking along the shore of a morning and evening, breathing the pure, fresh air, and bathing in its healthful waters, together with the bright and glittering light reflected from its bosom, is peculiarly calculated to promote cheerfulness, and is very favorable to the action of the heart and nerves of persons in delicate health. And let me, before I conclude, urge the delicate, and even those in health, to duly consider the benefit to be derived from visiting the sea-coast; the elevating thoughts, the pure air, the boundless prospect, the cheerful sky, all assist, and are more beneficial in producing sound health, than all the medicines that can be administered. Remember what I have before told you, that when the curative powers of nature fail, all medicines are useless.

My own observation during many years residence near the sea-coast, has assured me that bathing in the sea, and sea-air, are excellent remedies in cases of declining health, and have wrought many wonderful cures, imparting new life, and invigorating feelings, and soothing the troubled spirits. On beholding the bright, the broad and boundless ocean, the smile kindles again upon the care-worn face. Oh! it is a glorious thing, and healthful to the soul, to wander and look upon the sea, and with joy remember Him who walked upon its waves, who speaks peace, and gives us of His *spirit*, that we may follow Him to that peaceful shore, and be partakers of immortality and of His glory!

INFLAMMATION OF THE BOWELS.

INFLAMMATION OF THE BOWELS is characterized by acute pains in the abdomen, costiveness, more or less fever, and sometimes vomiting.

CAUSES. — The disease may be caused by obstinate and long-continued costiveness, by wounds and injuries to the intestines, by

severe colic, by eating unripe fruit, and by exposure of the lower extremities and abdomen to cold.

Symptoms. — Burning and acute pain in the bowels, which shoots round the navel; usually obstinate costiveness; vomiting of bilious or dark-colored matter; urine high colored; pulse quick, hard, and contracted; some fever, thirst, and great loss of strength. The patient is constantly belching up wind.

Treatment. — Soak the feet in warm lye-water — apply warm fomentations over the abdomen, flannel cloths dipped in hot lye-water — and give a large table-spoonful of cold-pressed Castor Oil, with half as much Olive Oil, and half a tea-spoonful of Spirits Turpentine, and repeat it every two hours till an operation on the bowels is effected. After the second or third dose is taken, it should be aided by an injection of the same with a little warm Milk and Molasses, and a tea-spoonful of Salt dissolved in it. If these means, after repeated trials, do not succeed, give more powerful injections; a table-spoonful of the Anti-bilious Physic, as much Salt, a tea-spoonful of Cayenne, a large spoonful of Lard, and a pint of hot Water; add a spoonful Tincture of Lobelia, and give the whole, warm, with a large syringe, and have it retained awhile by external pressure.

In severe cases, it is good treatment to apply to the abdomen hot fomentations made by boiling in vinegar and water such herbs as Hoarhound, Wormwood, Tansy, and Hops, and inclosed in flannel or muslin, to be changed and repeated often. If the costiveness can not be overcome, put the patient in a warm bath for half an hour. Occasionally leave off the hot fomentations, and apply a large Mustard Plaster over the abdomen.

After the bowels have once been opened, a table-spoonful of Castor and Olive Oil may be given once or twice a day, with 15 or 20 drops Oil of Turpentine in it, to keep them open. A tea of Senna and Manna, with a tea-spoonful of Epsom Salts, is also good. No harsh or drastic purgatives should be given.

If mortification should be apprehended, apply over the bowels a poultice made of a decoction of the Wild Indigo (Baptista Tinctoria) root or leaves, and give a little of the tea, or infusion of the same, internally, say 2 or 3 table-spoonfuls every three or four hours. This is one of the most powerful anti-septics known, and is good in all cases of Putrid Affections, Sore Throat, and the like, both internally and externally.

DIARRHEA.

THE discharges in this complaint are more copious, thin, and watery, than in Dysentery; and there is much less pain, griping, fever, and tenesmus, or straining at stool. A predisposing cause of Diarrhea is the action of the summer heat upon the system. Eating

of green fruits, corn, cucumbers, and garden vegetables, and in digestible substances, change of water, exposure to damp cold air, and sudden checks of perspiration, are prolific and exciting causes.

In children, teething is almost always attended with more or less Diarrhea, the inflammatory excitement of the gums being extended to the digestive organs. Diarrhea is not so dangerous a disease as Dysentery — indeed seldom dangerous, unless permitted to run for a length of time.

Treatment. — Where the disease is produced by eating too much, or by eating unwholesome or indigestible food, as is often the case, deranging the stomach and digestive organs, it will be well to commence the treatment with a good emetic, composed of equal parts of powdered Lobelia and Ipecac. (For the manner of giving an emetic, see "Emetic Powder.") This will free the stomach of its irritating contents, while at the same time the action of the emetic will check the inordinate action of the bowels, produce a determination to the surface, open the pores of the skin, and excite a more healthy action of the digestive organs. A good emetic will always render a cure more speedy and certain.

After the emetic is done operating, (or, in case you do not give an emetic,) give a few good-sized doses of the Neutralizing Powder, or Neutralizing Cordial. This will cleanse the bowels, and leave them in a proper condition for more astringent medicines. Or you may give a dose of Castor Oil, or of Rhubarb, with a little Leptandrin — say 1 dram of Rhubarb and 3 grains of Leptandrin, divided into three doses, and given two or three hours apart. You may add to each dose 10 grains of the Diaphoretic Powders, or as much Dover's Powders, or 21 drops of Laudanum.

Then follow the next day with any good Diarrhea Syrup, Cordial, or Mixture, such as the Blackberry Syrup or Cordial (see preparation of those articles among the Medical Compounds), and be very careful in regard to diet, drinks, and exposure to the sun, and keep quiet for a few days. A decoction made of a handful each of Blackberry Root and White Oak Bark, about 1 pint, with say ½ ounce each of Cloves, Cinnamon, and Allspice, sweetened with Loaf Sugar or Rock Candy, and taken several times a day in table-spoonful doses, will often be very effectual — only be careful not to astringe or bind up the bowels too much. To prevent this, take a dose of the Neutralizing Powder once a day, or a Pill composed as follows: Leptandrin, 20 grains; Rhubarb, 20 grains; Morphine, 2 grains, made into ten Pills, with a little Extract of Dandelion. Take one pill a day, or, in bad cases, two pills at a dose, once a day. The drink should be composed of a Mucilage of Elm Bark, or Gum Arabic, or cold Flaxseed Tea; the diet light, such as boiled Rice, Flour boiled in sweet Milk, parched Corn, and the like.

In very many cases a solution of Salt, Vinegar, and warm Water, will be found an effectual remedy for Diarrhea. (See that remedy among the Medical Compounds.)

The following is also regarded by many as an infallible remedy in Diarrhea: Parch ½ pint of Rice until perfectly brown, boil it down as usually done, eat slowly, and it will stop the most alarming case in a few hours.

The following is valuable in aggravated cases: Chalk Mixture, 4 ounces; Tincture of Rhubarb, 2 ounces; Tincture of Ginger, 2 ounces; Tincture of Opium, 1½ ounces; Aromatic Spirits of Ammonia, ½ ounce; mix, shake well before using, and take a table-spoonful every hour or two, according to symptoms.

I have generally, in nine cases in ten, stopped Diarrhea by burning 1 ounce of pulverized Rhubarb, and giving as much of the powder as will lay on the handle of a tea-spoon, or half a tea-spoonful, three times a day, swallowed with a little water. The Rhubarb should be burned in an iron vessel, over coals, and stirred while burning to black ashes. This is a powerful astringent, and, though simple, a valuable remedy.

Burnt Cork is valuable for Bowel Complaints and Bilious Affections of the Stomach. Burn an ordinary sized Cork until it is completely *charred;* then reduce to fine powder; mix with an equal quantity of Loaf Sugar, a tea-spoonful of Brandy, a little grated Nutmeg, a teaspoonful of Essence of Peppermint, a table-spoonful or two of Water, and give to children in tea-spoonful doses. It is innocent, and may be given frequently and in larger quantities. Good in Diarrhea, Cholera Morbus, Summer Complaint of Children, and Bilious Colic. It should be prepared in large quantities and always kept in the house. A table-spoonful is a dose for a grown person.

CHRONIC DIARRHEA.

Simple Diarrhea sometimes becomes chronic — that is, of long standing, by being neglected or improperly treated. It is then more difficult to cure. Very often the mucous membrane of the intestines becomes very much irritated, and assumes an abnormal or unnatural condition, perhaps more or less ulcerated. The liver, also, is apt to be in an unhealthy condition, and the whole function of the digestive organs is very much impaired. In such cases the remedies must be of a soothing and tonic character. At the same time attention must be paid to the liver and skin, for both will be found more or less out of order.

Treatment.— Mucilaginous articles will form an important part in the treatment, such as will have a tendency to shield the lining of the bowels from the acrid matter formed in the stomach, and from the unhealthy bile thrown out by the liver. The mucilage of Gum Arabic should form a part of all preparations given, or should be used freely at the same time. This Gum alone has often been known to cure when other means had failed. One case I now think of, where the patient, a lady, had tried various remedies for a long time, all without any permanent advantage, or at least without a cure.

She took to the Gum Arabic alone, eating from a half to a table spoonful daily, and was finally cured by it.

Slippery Elm Bark is, perhaps, nearly, or quite as good, and may be used in infusion, or the bark eaten freely. It is especially good if there is inflammation of the bowels attending the disease.

For Chronic Diarrhea take the following pills: Take Leptandrin, 20 grains; Ipecac, 20 grains; Podophyllin, 5 grains; pulverized Opium, 8 grains; mix well, and make into 40 pills, with a little extract of Dandelion; and take one pill night and morning. These will act gently on the liver and the skin, and have a beneficial effect on the bowels. The patient should wash the whole surface of the body once a day with warm Saleratus water, or weak Lye, with sponge or towel, and rub well, while drying, with a coarse towel. This will tend to open the pores of the skin, and excite to a more healthy action, which is very important. Use, also, the Neutralizing Cordial, or the Blackberry Syrup or Cordial, in table-spoonful doses, two or three times a day; use them in alternation, first the Neutralizing Cordial for a few days, then the Blackberry Syrup as long, and so alternate — not forgetting the Gum Arabic and Elm Bark.

Should the disease be of long standing, and the bowels most likely be ulcerated to some extent; or there is great soreness, as though the inside of the bowels or stomach was raw; and especially if there is any blood and mucus mixed with the discharges, then prepare and take the following pills: Take Leptandrin, 10 grains; Nitrate of Silver, 10 grains; Opium, 10 grains; pulverized Golden Seal, 20 grains (or Hydrastin, 10 grains); mix well, and make into 20 pills with mucilage Gum Arabic, or extract Dandelion, and take one pill every night on going to bed. Make use of the Cordial, also, during the day, and the mucilage of Gum Arabic or Elm.

The following has often cured the worst cases, and is said to be infallible: Take a quantity of old, rusty, well-smoked, fat Bacon, slice it and fry, so as to fry out the grease, enough to make ½ pint of grease; at the same time slice into it, while frying, two or three good-sized onions; when done, pour off, and of this take 1 table-spoonful once a day, or half that quantity twice a day, in a liquid state. I have been assured that it is a sovereign remedy, and I have no doubt but it is good. It has cured the "Mexican" and "California Diarrhea" when all other means had failed.

A friend of mine cured himself of a most inveterate Diarrhea, of many months standing, after trying every thing else he could hear of, by simply eating once a day, as his dinner, a slice of raw, smoked Bacon-side, a raw Onion, and plenty of Salt and Bread. It required only about two weeks to effect the cure. The remedy is not bad to take, if one is hungry.

In treating a case of Chronic Diarrhea, no matter what remedies you employ, care must be taken as to diet. It should be mild, nourishing, unstimulating, and easily digested. Boiled Flour and Milk, boiled Rice, parched Rice, and parched Corn ground to meal and boiled, and the like, will be found both medicine and food.

In some cases I have found astringent medicines to have the best

effects—while Opium, in any form, would only aggravate the complaint. It is always best to use but little Opium in Chronic Diarrhea. A tea or decoction of Logwood will be found an excellent astringent. You can always find the Logwood at drug stores, or wherever they keep "dye-stuffs" for sale. It is generally in the form of small chips. Get ½ or ¼ pound, and of say 1 ounce make a pint of strong tea, and take ½ a tea-cupful (or less, if very strong) two or three times a day.

A decoction of Blackberry Root is also an admirable remedy; it is both tonic and astringent, and may be relied on with great confidence. I have known the most inveterate cases of Chronic Diarrhea cured by taking about 2 grains of Ipecac morning and evening, and drinking ½ a tea-cupful, three times a day, of a strong tea or decoction of Blackberry Root. Ipecac seems to exert a very beneficial influence in diseases of the bowels, given in small doses.

Sometimes a large blister drawn on the abdomen will have a decidedly beneficial effect; or a large Pitch Plaster worn there for several days at a time.

DYSENTERY, OR BLOODY FLUX.

THIS disease usually commences with severe pains in the belly, with frequent inclinations to go to stool, which are small in quantity, and sometimes mixed with blood. There is mostly a peculiar sensation of bearing down while at stool, as if the whole bowels were falling out, and accompanied with considerable pain.

This disease, which has so much engaged the attention of medical writers, is more frequent in the autumnal months than any other season of the year. The animal frame is, at this time, generally relaxed and debilitated by long exposure to the stimulus of a high atmospherical temperature, when the digestive organs and internal canals necessarily partake of this debility, and are more easily irritated than under different circumstances. Dysentery, occurring in its simple form, arises generally from diet, in the shape of unwholesome or too rich food, or in improper quantities, or from exposure, or eating vegetables or fruit. Any substance disagreeing with the stomach, may operate in its production, or exposure to currents of cold air, when the body is heated, wet clothes and wet feet, all producing a sudden suppression of perspiration. Dysentery, in its worst form, is the disease of hot climates, and rages with a degree of violence unknown in more temperate regions. It arises from two causes, *direct* and *sympathetic:* the direct from those of improper diet or food; the sympathetic, or indirect causes, are those which operate on the

bowels through the medium of other organs, chiefly of the Skin, Liver, or the Lungs. Any exposure to cold, or accidentally getting the body or feet wet, or any sudden suppression in females of monthly sickness, are apt to produce Dysentery, and not unfrequently accompanied with slight fever.

Treatment.—I have found, when the complaint was not accompanied with fever, that simple remedies would relieve it in a short time; and in mild cases, the pulverized Rhubarb burnt to ashes in any iron vessel, stirring it until it turns to a black color, or well burnt, give ½ tea-spoonful, or less, three or four times a day, swallowing it with a little water, will often check, in a few hours, the disease. Or a table-spoonful of Castor Oil, and 1 or 2 tea-spoonfuls of Paregoric mixed, taken once a day, will be, in many cases, all the medicine required. Burnt Brandy is sometimes taken in this disease. If the pain is not relieved by Paregoric, 2 tea-spoonfuls more should be taken again at the end of four hours. A dose of Rochelle Salts, or Magnesia, will sometimes be found to answer better than the Oil; and 30 or 40 drops of Laudanum to be more effectual than the Paregoric. Where the Paregoric and Laudanum do not procure relief from pain, a tea-spoonful of Laudanum should be given by injection or clyster. Mix the Laudanum in half a pint of Flaxseed Tea, or less, the smaller the quantity the better, or in Starch Water, so that the quantity thrown up may not disturb the bowels, or as little as possible, and direct your patient to keep from going to stool as long as he can, so as to retain the injection and give it time to quiet the bowels. At the same time these medicines are used, the feet and legs should be soaked in hot water, and if convenient, give the warm bath, have warm blankets ready, rub the body dry, and quickly cover your patient, and give plentiful drinks of warm teas, such as Flaxseed Tea, Balm, Sage, or Catnip—the object is to produce a perspiration. Two grains of Ipecacuanha, once in three hours, will excite a sweat, if the hot bathing and teas should fail to do it. In my practice I have found great benefit from the use of Dover's Powders. [Refer to Dover's Powders for dose.] This powder I prefer to all diaphoretics, for it not only sweats, but quiets the bowels likewise.

The Dysentery to which children are subjected, will generally yield to a mixture of Oil and Laudanum, or Paregoric. To a child a year old, a table-spoonful of Castor Oil, mixed with 4 drops of Laudanum, should be given every day until the complaint is cured. This dose of Oil may seem large for a child of that age, but experience has confirmed the safety and great benefit derived in this complaint from large doses of Oil. We have often administered 2 table-spoonfuls of Castor Oil in a day, to a child of that age, with the happiest effect. The intention of this large dose is to clear the bowels thoroughly, and the opiate, or Laudanum, is to allay the intense pain. If the first dose of Laudanum will not produce relief, in eight or ten hours after the first dose is given we give a second dose of Oil and 3 drops of Laudanum, which generally gives relief. If the Oil will not agree with the stomach, which is sometimes the case, give doses of the

Neutranzing Cordial, once an hour, mixed with 4 drops of Laudanum; this will allay the pain and evacuate the bowels. It must be remembered that physic of all kinds is much longer in operating when given with Laudanum, or other opiates, than when taken without them. A dose of any kind of medicine will often be two or three times as long in operating when the system is under the influence of Opium, as when no such medicine has been given with it. It will sometimes be found in the Dysentery of children, that neither Oil nor any other purgative medicines, or Laudanum, or Paregoric, or any other opiates, will subdue the disease. In such cases, 1 grain, or even ½ a grain of Ipecacuanha, given once in three or four hours, will often both relieve the pain and evacuate the bowels. We have often seen Ipecacuanha given without any Laudanum, or Paregoric, or any other opiate, cure the Dysentery of children, when all other means have failed. Two grains of Dover's Powders, given morning and evening to a child a year old, with 3 grains Podophyllin, will occasionally be found more suitable than Laudanum or Paregoric. If the children are younger or older than one year, the dose must be reduced or increased, in proportion to the age of the child. To a child six months old, in this disease, 2 drops of Laudanum will be a full dose; and to a child two or three years old, 5 or 6 drops are a proper dose. To children past three years, 2 drops for every year may be added. We have often given to a child six months old, a table-spoonful of Castor Oil, at a dose, but when they are younger than this, a dessert-spoonful, or a tea-spoonful will be generally enough. Sometimes in the early stages you will find an emetic of Ipecacuanha will have a wonderful tendency, if given early, to resolve inflammatory action of the bowels; remember, in administering this medicine, that it is more successful in small doses. A blister upon the bowels, where there is not much fever, is often very serviceable. Fomentations by flannels, or cloths dipped in hot water, or spirits of any kind, or warm herbs, are almost sure to be beneficial, as they tend to solicit the blood to the surface, and to excite perspiration.

Dysentery, or as termed in the country, Bloody Flux, is a serious and often dangerous disease, if not properly treated — often prevailing in certain districts as an epidemic; that is to say, extending generally over the country, frequently attacking several members of the same family. It is a disease that is not likely to disappear of itself, and very often proves fatal; yet, if properly treated — which may easily be done — it is one of the easiest diseases cured in the world! If I had my choice among all the epidemic or alarming diseases known to this country, as to which I would prefer to treat, always warranting a cure, I would select Dysentery, and especially where it prevails as an epidemic. I propose to give here the Eclectic treatment, which I conceive to be a radical and successful treatment of this much dreaded disease; and, in my hands, has invariably proved successful.

Every family who have this book, and would be prepared for the treatment of this disease, as well as that of many others, should pro-

cure and keep on hand the following articles: Diaphoretic Powders, say 2 ounces; Neutralizing Powders, say 4 to 8 ounces (see Index for these Compounds); Leptandrin (see Black Root for a description) and Podophyllin (see Mayapple Root for a description), of each from ½ ounce to 1 ounce. They can generally be had at a drug store; but if not, can always be obtained of an Eclectic Physician.

When you are sure you have a case of Dysentery, no matter what stage of the disease — perhaps you have tried other remedies without success; perhaps nothing has been done; no matter — give the following: Make four powders, composed each of about 20 grains of Neutralizing Powder, 5 grains Diaphoretic Powder, 2 grains Leptandrin, and ½ grain of Podophyllin; give one of these powders every three hours. I am supposing the patient to be a grown person, or over twelve years of age; if below that, the dose should be smaller, in proportion to age. These will operate thoroughly on the bowels, which is very essential in the early treatment. Astringents are seldom proper in this disease, and often injurious — especially in the beginning. You may give astringents in Diarrhea, as much as you please (though in that, it is always best to begin with some good, mild, but thorough purge, such as the above), but in Dysentery it is absolutely necessary to use purgatives (of the proper kind), not only in the commencement of the treatment, but more or less throughout, or until the disease is completely subdued, and the patient begins to recover, after which, mild astringents may be used.

The four powders I have named will be sufficient for one day, especially if given in the afternoon and evening. Next morning commence with, and give once every three hours until you have given six powders, composed each of Neutralizing Powder, 10 grains; Diaphoretic Powder, 5 grains; and Leptandrin, 1 grain — to be given in a little syrup, or any convenient vehicle. In the mean time, the patient can or should drink occasionally of Slippery Elm Water, or mucilage of Gum Arabic, Flaxseed Tea, or any other mucilaginous preparation, as well as warm sudorific or sweating tea; and for diet, if desired, may take boiled flour and milk, or "thickened milk," as it is called, parched corn-meal boiled in milk, chicken broth, a little toast and the like.

If there is much pain in the bowels and apparent inflammation, warm fomentations, as flannel cloths dipped in hot water, or, which is better, a hot decoction of Hops, and other bitter herbs, can be applied to the lower abdomen, as warm as can be borne, and frequently changed or renewed. Injections of cold water, in case there is great tenesmus or desire to go to stool, will be beneficial; and in severe tenesmus, straining, and great irritability and inflammation of the rectum, with frequent desire to go to stool, an injection given occasionally, and retained a while by force, composed of Cold Starch Water ½ pint, to which is added 2 tea-spoonfuls of Laudanum and 1 tea-spoonful of the Neutralizing Powder, steeped in ⅓ of a tea-cupful of Hot Water, will be found highly beneficial.

The third day very little medicine, most likely, will be needed. The same powders as given on the second day may be given, at longer intervals; or, if the patient seems much better, the Leptandrin may

be left out, and the others given in 5 or 6 grains each every three or four hours, or perhaps but once in every six hours.

Should a relapse occur, or the patient at any time grow worse, instead of better, begin the whole treatment anew again, and pursue in the same way — only perhaps a little more vigorously. This course of treatment, to be governed and modified according to symptoms and the severity of the disease, will seldom, if ever, fail; and generally effects a cure in from two to four days.

To many persons powders are very unpleasant to take; and this will be found especially the case as to Leptandrin and Rhubarb. Latterly I have very generally, in all mild cases of Dysentery, and also in all cases of Diarrhea, adopted the following treatment, which I have found always successful, and much more convenient to the patient:

Take, say 10 grains Leptandrin, and 1 grain Morphine; mix well and make into three pills, by adding a very little mucilage Gum Arabic to make them adhere, and give 1 pill every six to twelve hours, according to symptoms. Three pills will generally cure any recent attack of Dysentery; and I have often had one to do it! In severer cases, where the patient has become prostrated with the disease, and it is likely to require considerable medicine to effect a cure, I would make say six pills, composed of 12 grains Leptandrin, 6 grains Ipecac, and 1 grain Morphine in the whole, and give one pill every three hours till three are taken, then one every six hours.

Very little other treatment will be necessary. Perhaps occasionally an injection, such as I have named; and occasionally some mucilaginous drinks, which may always be improved in taste by adding a little White Sugar and Lemon Peel and Juice. External treatment, such as bathing the whole body with warm Saleratus water, or weak Lye, and rubbing well with a dry towel; occasionally soaking the feet in warm water; hot fomentations to the abdomen — or, if preferred, cold applications, and the use of diaphoretic or sweating teas, will always be proper, and often highly important. With the treatment here recommended, if thoroughly carried out, no one need fear the Dysentery or Bloody Flux, no matter how alarmingly it may prevail in the neighborhood, nor how unsuccessful the old plan of treatment may prove.

For Children.— When children have the Dysentery, or Flux, they are to be treated the same as grown persons; but where they are under the age of five or six years, I would advise that in the Leptandrin prescription last given, the *Morphine* be omitted, as it is difficult to graduate the dose of Morphine for a child, and there is great danger of giving too much, unless done by a physician. An excellent way to use the Leptandrin is to triturate in a small mortar, or rub well together in any way, 6 grains of Leptandrin and 20 grains of Loaf Sugar, and, for a child three years old or under, divide into twelve powders, and for one over three, into six or nine powders (according to age), and give 1 powder every three hours in a little syrup or jelly; and also give, if much pain, about once in six hours, from 5 to 10 drops of Laudanum, or 1 tea-spoonful of Paregoric. The

Neutralizing Cordial is an excellent preparation for children in this disease, as well as in all forms of Bowel Complaints, and is generally the best form in which to give that preparation. It may be given along with or between the Leptandrin doses, in tea- or table-spoonful doses, and can always be used freely with perfect safety.

CONSTIPATION OF THE BOWELS.

THIS is one of the most troublesome of all complaints, and if allowed to become confirmed, often leads to serious consequences. It can never be cured by pills or other medicines taken into the stomach. On the contrary, the tendency of these things is inevitably to make it worse. The only permanent cure is a proper system of diet and regimen. But if not cured, immediate relief may be obtained by using injections. The best instrument for this purpose is the common syringe, which costs but a trifle. For injections, pure water in many cases will answer, milk warm. Throw up as much as to make the stomach feel a little uncomfortable, and if one injection does not answer, try another, and even a third.

Constipation in some persons becomes a habit, by carelessness and by suffering the bowels to remain for several days or more without an operation, and thereby is the cause of other affections, such as Colic, Dyspepsia, etc., of which diseases it is the general accompaniment. It is therefore of the utmost importance to attend to this matter at some fixed hour of morning or evening each day, as a neglect of the daily evacuations from carelessness, will sooner or later produce a diseased state of the system.

The Treatment is very simple, and merely requires a dose of Salts or Rhubarb, or a Seidlitz Powder, to relieve the bowels, and attention to the quality and quantity of food. Pills or drastic purgatives of every description, all more or less containing Aloes, should be strictly avoided, as they only increase the debility of the intestines, which is the cause of the complaint, and they likewise irritate the rectum, and strongly tend to the production of Piles. To pregnant women, when their bowels are constipated, which means bound up, the same mild treatment will afford relief. The best plan of treatment is the French method, by injections or clysters of cold or tepid water. I, therefore, from long experience, advise this simple, yet most effective remedy, to remove Constipation, or Costiveness of the Bowels. The French are great advocates for this mode of treatment — Clysters and Ptisans, or, in other words, teas — and to this may be attributed their general fine health and buoyant spirits; and if we would profit by their example, and avoid the use of active

and strong medicines, thousands of persons would prolong their lives to a good old age who now die prematurely by dosing and drugging.

People of costive habit should not depend upon meats and other highly nutritious food only, but should use a considerable portion of loosening foods; cracked wheat or corn, oatmeal porridge, or brown bread, potatoes, apples, and the like, which tend to make bulk and excite the fine nerve network of the mucous membrane of the intestines to action.

Some persons find cold bathing beneficial, and where the normal heat is restored by the friction of rubbing dry with a coarse towel, good results; in other instances, dry rubbing with a flesh brush each day, is greatly beneficial. Kneading the bowels daily, or more frequently, also helps the organs of digestion and evacuation. See page 1132.

COLIC.

SYMPTOMS. — Violent pain in the region of the navel, attended with thirst, and belching of wind, costiveness, and the belly swelled, feet become cold, and a cold clammy sweat is often produced by the intense suffering.

It is brought on by eating or drinking something that disagrees with the stomach or bowels, by cold, or exposure, or getting the feet wet.

Treatment. — Bathe the feet and legs in Warm Water, and apply Hot Fomentations over the stomach and belly, by which is meant Hot Water, Hot Herbs, or a poultice of Mustard or Hot Salt; take a good dose of Castor Oil, and drink freely of Peppermint, or Ginger, or Calamus Tea, or warm Lemonade, and if considerable pain, from 30 to 60 drops of Paregoric in a little hot water, and if the Paregoric is not convenient, give 25 or 30 drops of Laudanum. If the pain still continues, or the Oil does not act on the bowels, give a clyster of Warm Water, to which add a table-spoonful of Salt and a tea-spoonful of Lard, and, if convenient, give the warm bath. I have found the Thomsonian remedy, No. 6, made of Red Pepper, French Brandy, and Gum Myrrh, which articles can be purchased at any drug store, and should be kept in every family, very useful; for I consider it one of the most valuable medicines now in use for Colic, Cramps, Cholera, Bowel Complaints, and a variety of other diseases in which I have used it with great benefit. "Render unto Cæsar the things that are Cæsar's." The dose is generally a tea-spoonful in a little hot water, and repeated, if necessary. If the pain is not relieved, give Laudanum gradually, in Ginger, or Mint Tea, and to the clyster add a tea-spoonful of Laudanum. Persons who are subject to Colic should be cautious as to their diet, and avoid costiveness, by going regularly to stool.

An eminent physician recommends the following as an infallible remedy for Colic:

When this disease arises from flatulence, a tea-spoonful of Spirits of Turpentine, taken with a table-spoonful of Castor Oil, will immediately relieve the sufferer.

One of the quickest and most certain remedies is the Anti-bilious Physic, in doses of 10 grains every half-hour, until the bowels are operated upon and the pain relieved.

BILIOUS AND CRAMP COLIC.

SYMPTOMS. — Bilious Colic, sometimes also called Cramp Colic, is characterized by excruciating pain in the region of the navel, thirst, feverish symptoms, vomiting of bilious matter, and costiveness.

The attack generally commences with a bitter taste in the mouth, followed by vomiting of a yellow-greenish matter. The bowels are constipated; little or no discharge of urine; the pain about the navel will sometimes shift from place to place; a sort of hoarseness usually attends the patient throughout the disease, and more or less fever. Sometimes there are cramps in the stomach and limbs.

Treatment. — In two important respects — vomiting and costiveness — Bilious Colic very much resembles the Milk Sickness, and therefore is to be treated in a very similar manner. Endeavor to allay the irritability of the stomach by giving, in small and frequent doses, Peppermint Tea, with a heaping tea-spoonful of Saleratus dissolved in a half pint of it. Apply over the stomach and bowels a large Mustard Plaster, wet with Vinegar, — first bathing the abdomen with Spirits of Turpentine. If this does not stop the vomiting, give an emetic.

As soon as the stomach will retain medicine, commence giving something to move the bowels; either an Anti-bilious Physic, or the following, which in this case is one of the best: Take Epsom Salts, 8 ounces: Muriatic Acid, 2 drams, or 2 tea-spoonfuls; Boiling Water, 1 pint; after it is cool, add ½ ounce Essence of Peppermint, and as much Essence of Anise, to give it a flavor and make it more palatable. Dose: 1 table-spoonful every half hour till it operates, or the whole is taken.

After the Mustard has been on as long as it can be borne, remove it, and apply constantly to the abdomen flannel or other cloths, dipped in hot water. This will have a soothing and relaxing effect.

If the costiveness is obstinate, and the medicine does not take effect, active injections must be given, such as the Anti-bilious Physic, Emetic Powder, Salt, and a little Cayenne, with warm Water and Hog's Lard. The bowels once open, keep them so, and produce perspiration.

An excellent remedy in this disease, highly prized by some physicians, is a saturated tincture of green Walnuts, made by slicing the Walnuts, when green, and adding enough Whisky or dilute Alcohol to cover them, and let them digest a week or two. Dose: 1 tea-spoonful every half hour, till relief is obtained.

Those liable to bilious attacks should especially avoid the use of pork or of much meat, and rich foods generally. Good light bread, one day or more old, may be freely used, and perhaps light puddings of rice, corn-starch or flour, sago or tapioca, made up with small quantities of milk and eggs. Frequently grapes are useful, if consumed at the rate of a half-pound daily, and lemon juice may be to the extent of a half-ounce to an ounce daily.

CHOLERA MORBUS.

SYMPTOMS.—This disease is characterized by vomiting and purging, with griping, pain and cramps in the stomach and bowels. It prevails generally during hot weather. The discharges from the bowels are at first thin and watery, but after a little while they become more bilious; the retching, vomiting, purging and pain, become more severe and frequent, and during the intervals there is great sickness and distress in the stomach; sometimes there are cramps in the muscles of the abdomen and extremities. There is great thirst, and desire for cold water; but nearly every thing taken into the stomach is thrown up in a very short time. As the disease advances, the pulse becomes small and feeble; the extremities cold; countenance pale, expressive of great distress; a cold sweat breaks out, succeeded by great prostration.

CAUSES.—Cholera Morbus is more common some years than others, prevailing sometimes as an epidemic, and seems to be owing to some peculiar poison or acid generated in the system. When the tendency to the disease exists, the use of indigestible and irritating food and drinks, unripe fruits, or even ripe fruits that contain acid, or soon run into a state of fermentation, vegetables, green corn, and the like, will often bring it on. At such times, when the disease is known to be prevailing, the daily use of Antacids, especially of a little weak White Lye, will generally neutralize the poison acid in the stomach, and prevent the disease.

Treatment.—There is, of course, great irritability of the stomach, the patient throwing up nearly every thing he swallows. A very good thing to settle the stomach, as well as to check the purging, in this disease, is the following domestic preparation: Take ground Black Pepper, 1 table-spoonful; as much Table Salt; ½ tumblerful of Warm Water, and as much good Cider Vinegar. Give, of this, 1 table-spoonful (to an adult), every minute or two, stirring the mixture each time, till the whole is taken. The first tumblerful may be vomited up; if so, repeat the dose. It will seldom be vomited the second time. This is also an admirable remedy in Cholera. It may be relied on in Cholera Morbus, and in genuine Cholera, if taken at the commencement. I have cured Cholera with it alone, when the patients have been in a state of collapse.

A table-spoonful of Black Pepper boiled in ½ pint of milk, and given gradually in small doses, will sometimes quiet the stomach; so will Peppermint Tea with a little Saleratus dissolved in it. But if all efforts of this kind fail, give an emetic of Lobelia and Ipecac. After which, as soon as the stomach is sufficiently quieted, give the Neutralizing Powder, either in the form of powder, or in a liquid state. If in powder, about 1 tea-spoonful to an adult, every half

hour, or hour; if in liquid, take 1 ounce of the powder, and add ½ pint of Boiling Water, sweeten with Loaf Sugar (and you may add a little good Brandy), and give 1 table-spoonful once an hour. This is to be continued till it acts upon the bowels, and the discharges are changed in color and consistence, after which it can be given less frequently.

At the same time the feet and legs should be bathed in Warm Lye-Water, after which a Mustard Plaster should be applied over the stomach. It is a good plan, also, to apply a warm fomentation of Hops and Vinegar to the bowels, or cloths dipped in the decoction of the same.

In making an infusion of the Neutralizing Powder, as directed, it may be improved by adding to it 12 Powdered Cloves, and a little Cinnamon Bark. These are both good astringents, and are also calculated to quiet the stomach. If there is much pain in the bowels, 30 or 40 drops of Laudanum may be given also (to an adult), and repeated in an hour or two if necessary.

Endeavor to produce and keep up a perspiration, by the use of Sweating Teas; the Diaphoretic Powders (see Table of Family Medicines), and the employment of Hot Bricks, or external heat, about the patient.

After the urgent symptoms have been allayed, and sufficient of the Neutralizing Physic has been taken to act upon the bowels, you may give something more astringent. A strong decoction of Burnt Corn is very good. Parched Corn, ground in a coffee-mill, and boiled in Milk, or in Water, is a very good diet. So is Parched or Browned Rice, and then boiled soft. A strong decoction of the Blackberry Root may be made, to which some Cloves and Cinnamon have been added, and the patient take ½ tea-cupful, two or three times a day Burnt Rhubarb is also a splendid remedy in this and all bowel complaints. To prepare it, burn 1 or 2 ounces of powdered Rhubarb on a shovel, or in an iron vessel, till it is quite black, stirring it the while, and give of this to a grown person, from ½ to 1 tea-spoonful three or four times a day. You may combine with it half as much of the Diaphoretic Powder. And after the first twenty-four-hours, if the patient is improving, or the discharges from the bowels are pretty much checked, it would be well to add also to each dose, ¼ grain each of Podophyllin and Sanguinin, and ½ grain of Leptandrin, until five or six doses have been taken. This will excite a healthy action of the liver and secretions, and prevent a sudden constipation of the bowels, which must be avoided, or inflammation may take place. A grain or two of Ipecac may be added to each dose, instead of the Diaphoretic Powder.

PILES.

THE Piles, medically called *Hemorrhoids*, are tumors which form in the lowest part of the straight intestine, and consist of vascular enlargements, covered by the mucous membrane, which protrude into the

passage and frequently extrude from the outlet of the bowel, so as to exist there as small or large, painful external tumefactions. Of piles there are three varieties: The first are called Internal Piles, and the second External Piles. Frequently these tumors or swellings bleed at every motion of the bowels, and thus are called Bleeding Piles. Sometimes the circular band of muscular fibres at the outlet of the lower bowel is subject to spasm and perhaps closure, possibly the result of inward irritation or outward injury.

Piles, or hemorrhoids, are caused by an indifferent flow of blood through the veins which return the blood from the lower bowel into the circulation. These veins mainly empty into the venous portal system of the liver, and in almost every case the difficulty is due to congestive and temporary inaction of the liver. The disease occurs commonly in persons of inactive or sedentary habits, and especially in those who indulge in alcoholic drinks or use tobacco. As a rule, the first attack of piles comes on after constipation. They are likely to produce dejection of mind, and where there is much loss of blood are attended with exhaustion of body.

Itching is, perhaps, one of the earliest symptoms—a sense of heat and fullness of the rectum—a dull, heavy weight in the back and lower region of the belly, and uneasiness in sitting or walking about. The patient will suffer the most severe pain while passing his stools, and the tumors, whether internal or external, will become swollen, tense and extremely tender, so that they can scarcely be touched.

If the tumors break and discharge their contents, relief soon follows, until a new crop forms; but where they continue tumid or hard, and unbroken for some time, there will be great suffering when the person has a discharge from the bowels, and not unfrequently at this time, by straining or efforts, the tumors bleed profusely, which immediately, for a time, gives partial relief. Hemorrhoidal tumors vary very much in form and color. When they are highly inflamed they are red or purple, tense, and hard; but when they are in an indolent condition, they are more or less pale or flaccid — or, in other words, soft. Some of these tumors are hardly larger than a pea, while others exceed a hen's egg in size. The symptoms of the External Piles are, an external swelling, which feels round and hard, which is hot and painful on the passage of the stools, and more or less itching. It sometimes bursts and discharges blood with the stools. In a few days it begins to disappear. Sometimes it becomes inflamed and very painful, and not unfrequently it suppurates and lays the foundation of Fistula.

The Internal Piles are originally enlarged veins. They produce great pain, bleed frequently, and render the passage of the excrement

difficult, while the stools are often mixed with blood, which frequently produce what is termed *Prolapsus Ani*, or falling or protrusion of the anus. The person, after each stool, feels as if there were more to be discharged, and strains until he forces a part of the rectum externally, thus producing what is medically called *Prolapsus Ani*, and is often obliged to return these with his finger. And beside the evacuation being very painful and tedious, this return of the part is exceedingly difficult; and when the number and size of the Piles, and the degree of the prolapsus become great, then their return is impossible, without giving sufficient time for the inflammation to subside — for, in attempting it in this stage of the complaint, you will inflict an unwarrantable degree of pain and suffering on the patient. In some instances the urine is retained, the passage of the stools very difficult, and there is a free discharge of thin acrid matter from the parts. These symptoms will, however, be relieved as soon as the pressure or inflammation subsides, and the prolapsus is returned, when the patient will be partially relieved for some time.

The Piles are produced by costiveness, a want of cleanliness, and by intemperance in eating and drinking. A diseased state of the liver, corpulence, a plethoric or full habit, strong purgatives, particularly Aloes (which, if taken too constantly, act powerfully on the rectum or lower bowels), will both cause Piles and aggravate them when existing. Women are often great sufferers from this painful and tormenting disease, produced by the pressure of the uterus, or womb, upon the rectum in child-bearing, and from an inactive, sedentary life — particularly those who are in the habit of sitting or sewing the whole day, taking no exercise or any rest of position, which produces an indolent or torpid state of the bowels, and is the usual cause of Piles.

In some cases they are attended with severe inflammation, pain, suppuration, and discharge of matter. When this is the case, there is danger of the formation of fistulous ulcers.

The Bleeding Piles produce paleness of the skin, and general weakness. If a falling of the intestine happens at the same time, the exhaustion of the strength and the weakness of the part often requires very great care in returning this protusion or prolapsus. Sometimes only a very small part of the intestine is thus displaced; on other occasions, there is a very considerable portion of it. When this is protruded at the time the patient is at stool, the part is to be immediately replaced. This is to be done with the finger, which should be well oiled or greased. The patient should accustom himself to do this without assistance. The greatest difficulty, in some cases, is not the returning of the intestine, but keeping it in its place. The latter

object often gives a great deal of trouble, and frequently requires a compress, doubled several times, and applied to the anus, and supported in this position by means of a bandage. The Piles also occasionally cause abscesses to form in the vicinity of the anus, terminating in Fistula — a name applied to a sore which runs some way under the skin, and penetrates within the intestine, and discharges a thin matter from its sides, which are converted into secreting surfaces. Piles may be occasioned by whatever interrupts the free return of blood from the rectum; such as the collection of hard *fæces*, or, in plain language, the stools, which excites and irritates those parts; or it may arise from an impregnated or enlarged womb, or from relaxation and debility, and not unfrequently from an inflammatory action in the rectum or fundament, and a diminished secretion of mucus from its inner membrane. A diseased state of the liver is also a cause, by preventing a free return of blood; also excessive indulgence in venery; but usually they arise from intemperance, excessive high living, and want of exercise. A confirmation of this remark is found among persons who have led an active life, till a certain period, when fortune or easy circumstances have induced them to retire from business, and, indulging in intemperance, they have become, for the first time, affected with Piles.

Corpulent or fat persons are much subject to this disease, occasioned by the pressure of the omentum or apron covering the bowels, and mesentery or membrane uniting the bowels, upon the mesenteric veins. I may, then, in reference to the causes of this complaint, conclude my remarks by saying, it is generally produced by sedentary habits, corpulence, or full plethoric habit, intemperance, a morbid condition of the liver, pregnancy, costiveness, dyspepsia or indigestion, high or luxurious living, and last, though not least, drastic purgatives.

Treatment. — The first, and one among the most important remedies in this disease, is a proper course of diet. No wines or ardent spirits must be used; for this complaint is generally brought on by high living, therefore an opposite course will be essential, as a powerful means of prevention and cure.

Costiveness, more or less, always accompanies or greatly aggravates this complaint, if it does not, in many instances, produce it; therefore the important necessity of attending strictly to a regular state of the bowels, and using such laxative food as will regulate them properly; such as Rye Bread, Indian Meal, in any form, eaten with Molasses, Rye Pudding, coarse unbolted Wheat Bread, Potatoes, Ripe Fruit, Stewed Peaches, Milk, and generally a nutritious vegetable diet, so as to regulate or prevent costiveness of the bowels. Medicines which act moderately upon the bowels are frequently required. In such cases, you will find the Cream of Tartar, in the

dose of a heaping tea-spoonful, mixed with Water, Molasses, or Syrup, a good remedy. The compound Rhubarb Pill is also a mild purgative, and does not irritate the rectum. The Flower of Sulphur is a very mild cooling laxative, and if given with Cream of Tartar, will very much assist its operation. Mix equal parts of the Flower of Sulphur and Cream of Tartar, and give a small tea-spoonful of this once a day, mixed with Molasses or Honey, until it acts sufficiently upon the bowels, and take through the day an infusion, or tea, made of equal parts of Elder Flowers and Mullen combined. This will have a favorable effect upon the parts diseased, by its laxative, cooling, and astringent powers.

When the tumors become very painful, and are considerably inflamed, a poultice made of the Pulverized Slippery Elm Bark and Milk will be found to give great relief; and apply the following valuable ointment, with which I have relieved more suffering, and used to greater advantage, than any other remedy: Take 1 table-spoonful of fresh Butter, without Salt, and 2 tea-spoonfuls of Spirits of Turpentine; mix them well together. Apply this ointment with the finger over the diseased or inflamed parts, and up the fundament, two or three times a day. In hundreds of cases, treated by this simple, though valuable remedy, the cure was generally effected.

The following ointment is a very good one: Take of Lac Sulphur, commonly called the Cream or Flower of Sulphur, 1 tea-spoonful, and mix it with 1 table-spoonful of fresh Butter, in which there is no salt, and stir it up well, and apply it to the Piles two or three times a day.

Dr. Bodenhamer, so distinguished in this disease, uses an ointment made of Opium and Jamestown Weed, medically called *Stramonium*. This salve is made by simmering the bruised leaves of this weed in fresh Butter, or Hog's Lard, and adding a little Laudanum to it. If rubbed on the affected parts, it is said this remedy will afford speedy relief. Bathing the parts with cold water is also highly recommended.

I have found cold water, as an injection, and bathing in it frequently, in many cases, very serviceable in this complaint, as it affords great relief by removing the inflammation; it should, therefore, be repeated several times a day, or twice at least, in Piles, prolapsus of these organs, inflammation, and all diseases of the Rectum, Anus, etc. During the time that these local applications are made, it is essential that the bowels should be kept sufficiently open. In some cases, steaming over bitter Herbs, such as Hops and Wormwood, and an injection of about a pint of Tepid Water up the bowels is advised. Where there is extreme irritability of the parts and severe pains, this warm steaming will afford great relief, particularly when the tumors become very painful, and are attended with considerable inflammation.

The Harlem Oil, mixed in Brown Sugar, taken twice a day, in doses of 15 drops, with the following emollient injection, will be found to relieve this disease, and remove the painful irritation. This injection is made of the mucilage of Slippery Elm Bark, with Cold

Water, and White-oak Bark boiled, of a moderate strength; when cold, mix them together, and inject twice a day up the rectum, and apply the salve before mentioned, Spirits of Turpentine and fresh Butter; this, with cooling washes, if regularly applied, will be found an excellent application. When the Piles are much inflamed, a valuable remedy is a poultice made of the common smoking Tobacco and fresh Butter, in the proportion of one part of the former to two of the latter, simmered and strained, to be applied two or three times a day.

Extract of Wild Lettuce, medically called *Lactuca Elongata*, and known also by the name of Milk-weed, and Trumpet-weed, is highly spoken of as a certain cure for Piles. The whole plant is taken when in flower, cut up short, and boiled in a suitable quantity of water for an hour, then strain and press out all the juice, return the liquor to the kettle and boil down to the consistency of tar, taking great care not to scorch or burn it. Then bottle close for use. Dose: 1 teaspoonful three times a day until a cure is effected, using one of the salves as before mentioned, applied to the Piles.

A late discovery has been made, which may be regarded almost as a specific in Hemorrhoids or Piles, either internal or external. And to Dr. Daniel Higbie, a distinguished practitioner of the Eclectic school, we are indebted for this communication, which is another evidence of the value of many medicinal plants in this country, whose virtues are as yet not known or appreciated.

The article is the oil of the *Erigeron Canadensis*. My method is to give from six to twelve drops, morning and night, in a little milk, after having first given some mild purgative, such as Castor Oil or any simple medicine, for the purpose of freely moving the bowels. The Piles are then to be anointed with the oil, when down; and for diet I direct unbolted Wheat Bread for the principal food, until the cure is effected. "I once cured a gentleman of the Piles," says the doctor, "of about twenty-three years standing, in six weeks, with this remedy. He had recently tried Upham's Pile Electuary, and every other medicine he could hear of that promised any relief. He was unable to walk, for weeks in succession, every two or three months, and suffered every thing but death. It is now five years since the cure was performed, and he has not had the least symptom since that time." The oil of *Erigeron Canadensis* is obtained by distillation of the leaves and flowers of the herb called Canada Fleabane, and known by the various names of Colt's-tail, Pride-weed, Scabious, Horse-weed, and Butter-weed.

This plant is common to the northern and middle portions of the United States, growing in fields and meadows, by road-sides, and in waste places, and flowering in July and August. The volatile oil may be purchased at any drug store; it is of a reddish color, resembling currant-jelly, and when burning has a smell like that of cedar.

This oil acts as an astringent, and may be used likewise, with great benefit for the Piles, as a local or outward application. It must be mixed with five or six parts of Castor Oil, or with the same quantity of Jamestown Ointment, medically called *Stramonium Ointment*

or with the same portion of Goose Oil, or some similar substance, and will be found one of the most valuable applications for the Piles.

The properties and uses of this plant are tonic, astringent, and diuretic. The infusion has been found very valuable in Diarrhea, Gravel, Diabetes, Dropsical Affections, etc., given as follows: Put 1 ounce of the herb in one pint of boiling water, let it stand half an hour. The dose is from 1 to 2 wine-glassfuls three times a day.

This Volatile Oil, which I have before described, is not only valuable for Piles, but likewise for bleedings from small wounds, etc., and in Rheumatism, Boils, Tumors, and Sore Throat, for which it should be Mixed with Goose Oil, or some other oil, being too irritating to use alone. When it is taken internally, it will be found useful in Diarrhea, Dysentery, Hemoptysis, or bleeding from the lungs, and discharges of blood from the stomach and bowels, and will be found likewise a powerful remedy in Uterine Hemorrhages, which means in women, flooding or great discharges of blood from the womb. It acts promptly and efficaciously. The dose is from 4 to 6 drops of the oil, on sugar, or dissolved in alcohol and given in a little water; which may be repeated, if necessary, every ten or fifteen minutes, until several doses have been taken.

I feel it my duty, before closing, to inform my readers that the excision of the internal Piles or Tumors is an exceedingly dangerous operation; and one of the best surgeons, Sir Astley Cooper, with many others, express their opinions that numerous disastrous and fatal cases have been the result of this operation, from hemorrhage or loss of blood; and I feel assured that not one patient in a hundred would submit to this operation, if they had a knowledge of the serious danger which attends it.

Dr. Bushe, in his valuable work on *Diseases of the Rectum and Anus*, says that "excision is attended with great danger from hemorrhage;" and he remarks: "I so nearly lost two patients, that, when left to my own choice, I no longer have recourse to this operation." The Piles or tumors sometimes, when they have been neglected, or improperly treated, become so seated and enlarged that it becomes necessary to remove them. Should this take place after trying the various and valuable remedies I have before mentioned, they should be cured by ligature, and the best and most successful operator in the United States is my worthy and kind friend, Dr. Bodenhamer, of New York, a gentleman of distinguished skill. Should it, however, happen that those afflicted with this complaint may not be able to avail themselves of his assistance, I will explain this method of treatment by ligature. A piece of silk thread, well twisted and waxed, is passed around the largest tumor: after having been drawn down, and tied as tight as the patient can bear, the knots may be occasionally drawn a little closer, until the circulation in the tumor or tumors is entirely stopped; this will gradually separate or cut it off, and in a week or ten days a cure will be effected.

If the ligature or thread creates much inflammation, apply a poultice, and, if necessary to relieve the pain, give a dose of Laudanum or Opium.

In some instances the tumors or Piles are seated so high up that they can not be tied conveniently; if so, the patient may force or expel the tumor or tumors as much as possible, by straining as if at stool; or, if this can not be done, they must be drawn down with an instrument called forceps; when the tumor is brought down, one or more of them may be tied at a time, according to the size. Care, however, should be taken to draw the knot so tight as to prevent completely all circulation, so that the lump may mortify and drop off. It is best to remove the largest, as the others will shrink up and give but little trouble. The ligature is the proper treatment when other remedies fail; there is no danger in this operation, and great benefit is derived from the discharge which it produces. I have removed a number of very large tumors at a time with the ligature, and effected a perfect cure by this simple though invaluable operation. The ligature prevents the danger of bleeding, and although it may appear tedious, with some suffering, yet the pain which it produces may be greatly lessened by not drawing the ligature too tight. The plan I use is to draw down the Pile with forceps, or an instrument called a tenaculum, and tie a piece of waxed silk around it, drawing the knot gradually until the patient complains that he can not bear it any tighter; then tie a second, and cut off the silk thread an inch from the knot, and with the finger well greased return the intestine and Pile.

I have now given you the best treatment for Piles in their various stages; and I have had an opportunity of witnessing the most surprising and gratifying success from the various remedies I have given in this, though not dangerous, yet most distressing and painful disease.

PROLAPSUS ANI—FALLING OF THE BOWEL.

FALLING OF THE BOWEL OR INTESTINE sometimes becomes a very troublesome affection, and is not always dependent upon Piles, but may be, and often is, owing to other causes, such as excessive straining at stool; to the long-continued use of Aloes, and other purgatives; to small worms in the Rectum, called Ascarides; to Costiveness, severe attack of Dysentery, and a relaxed condition of the bowels, from any cause whatever. It is very common in children, especially if troubled much with bowel complaints.

Prolapsus of the Bowel occurs usually while the person is at stool; and, as was intimated in the previous article, should be carefully returned by pressure of the fingers immediately afterward. Grown persons, in all ordinary cases, can do this for themselves. If the protrusion of the bowel is very considerable, or is very tender, inflamed or painful, the fingers should be well greased or oiled first.

Where the person can not do it himself, or in case it is a child or infant, the patient should be placed on his back, with the hips considerably elevated, while the nurse, attendant, or physician, previously oiling the fingers, carefully returns the protruded bowel; and if need be, that is, if it will not remain of itself, until the next stool, or passage from the bowels, a compress, made of several folds of muslin, must be placed upon the anus, and held firmly there by means of what is called a T bandage, that is, a firm bandage around the body just above the hips, with another attached to it in front, passing down between the legs, and brought up and attached again behind. This, however, is only for temporary relief.

The Treatment, in order to overcome and cure the difficulty, which is a relaxed condition of the bowel, must consist mainly of astringent applications and injections. Therefore, after returning the bowel, and previous to applying a compress (where that is necessary), inject into the rectum some good astringent decoction or solution, such as a strong decoction of Oak Bark, or of Geranium Root, and then apply the compress, first wetting it also with the decoction, and have the injection retained as long as it can be borne. A little powdered Alum may be dissolved in the decoction, say a table-spoonful to a pint of the liquid; and in case of much soreness or any ulceration, a teaspoonful of Copperas. Cold water injections occasionally will also be good, especially if there is inflammation. In all ordinary cases, especially in grown persons, such astringent injections as I have named, once or twice a day, first injecting cold water, and perhaps the use of some astringent ointment, or in case of Piles, some good Pile Ointment, will be sufficient without the use of the compress. In most cases of children, the use of the compress depends entirely upon whether the bowel will or will not remain without it. An astringent ointment will also be found of great benefit, and often sufficient to relieve ordinary cases. Take any good Pill Ointment, and into say an ounce of it incorporate and mix well a dram of Tannin, which may be had at a drug store, and anoint the bowel while returning it, and afterward well with it. Or, if you cannot get the Tannin, take a small handful each of White Oak Bark, the Bark of Sumac Root, and Blackberry Root, or Geranium Root, cut them up fine, and simmer in a pint of water, ½ a pint of Lard, and a lump of Rosin as large as a walnut, until all the water is evaporated, then strain, and when cold anoint the bowel with this.

In case the protruded bowel becomes too much swollen and inflamed to be returned in the manner indicated, as is sometimes the case, means must first be adopted to reduce the swelling and inflammation. The application of warm water for a considerable length of time may be tried, by means of folded muslin or cloths; if this does not succeed, apply an Elm Poultice, and continue, renewing, if necessary, until it can be replaced. Then pursue the measures already indicated. Persons subject, or having a tendency to Prolapsus of the Bowel, should avoid straining at stool as much as possible, and the bowels

should be kept regular by the use of proper diet, such as bread made of unbolted Flour, and, if need be, occasionally some mild laxative, as Butternut Pills, or Extract of Dandelion, and cold water injections. Avoid Aloes and drastic purgatives.

FISTULA IN ANO.

CLOSELY connected with, and generally depended upon Piles, is a fistulous disease of the Rectum or Anus, called *Fistula in Ano.* It is an abscess at the side of the rectum, opening externally near the anus, in most cases, though it may open at some distance from it, and, very often internally, into the rectum, a few inches up. Usually the first symptom is a hard swelling at the side of the anus, attended with more or less inflammation, as though a boil was about to form there. Sometimes its appearance is preceded by a sort of erysipelatous inflammation about the anus; and again there may be a hardening merely of the surface at the point where the opening is about to appear, without pain or inflammation. The Fistula may open first externally or internally, and it may open only one way or the other. When there is only an external opening, it is called a *Blind External Fistula*, and is much the easiest form to cure; when it opens only internally, it is called *Blind Internal Fistula;* and when both internal and external, it is known as *Complete Fistula.*

Abscess of the Fundament, or Fistula, is generally caused by Piles, long neglected; also habitual costiveness, and inattention to regular evacuation of the bowels. It may also be produced by external injury in that locality, from riding on horseback and the like, erysipelatous inflammation about the anus, and whatever may induce functional derangement of the rectum.

Treatment. — When the Fistula is either complete or of the internal kind, it is very difficult to cure. Indeed it is always difficult; and being also a very troublesome and often painful disease, it should always be submitted to the care of a skillful physician.

If there is much pain and inflammation, emollient poultices must be applied to reduce the inflammation. Steaming the part over a hot decoction of Bitter Herbs will also be beneficial. The Fistula, or opening, must also be kept thoroughly cleansed, by being injected frequently, or at least every time after an evacuation of the bowels (in case the opening extends into the rectum), with some cleansing and stimulating injection. Warm Castile Soapsuds should be used for this purpose, adding a little Tincture of Myrrh to the last injection each time, to stimulate and produce a healing action in the walls of the Fistula.

If the Fistula has not yet opened, poultices are to be applied, such as of powdered Elm Bark, or Elm and Flaxseed, to hasten it to a head, and as soon as it points, the inflammation subsides, and you perceive that matter has formed and is near the surface, it will be well to open with a lancet and let out the matter. Then poultice for a day or two to remove the remaining inflammation and tenderness before commencing the injections into the sinus or opening.

The Soapsuds injections should be used as often as morning and evening; and after a few days, weak Lye should be injected, gradually increasing the strength, as the patient can bear it. Occasionally inject with Tincture of Myrrh and Pyroligneous Acid, weakened with an equal quantity of warm water. If much pain and tenderness, add a tea-spoonful of Laudanum to the injection. A small glass or metal syringe should be used for the purpose.

After pursuing this course for a few days, or as long as matter continues to form and discharge, then make use of additional treatment, as follows: Take a quantity of good strong Lye, say two or three gallons, and boil down to thick Potash; evaporate and let it dry, then powder it, bottle, and cork tight. Then take a piece of coarse twine (hemp twine will answer), or cotton lamp-wick, or a strip of twisted muslin, so that it is not too large, and dip it into melted Beeswax and Tallow. Let it cool to stiffen it, roll it in a little powdered Potash, so as to cause the powder to adhere well to it, and introduce this into the sinus or Fistula, having it long enough to extend the whole length of the opening, and the end to remain out about half an inch. Apply a small bunch of lint or cotton around the end of the twine, and over the Fistula, and cover the whole with a plaster of Black Salve, or any adhesive Plaster, and, if need be, apply a compress and bandage. This will smart considerably for a short time—but it must be borne, for it will do good. The lining or wall of the sinus is so hard and callous that it will be impossible to cure the disease without first destroying this callous tube. The Potash will do this, if continued long enough, and will also reduce the inflammation and change the nature of the discharge, rendering it more healthy and the parts more disposed to heal. This application of the Potash should be made twice a day, for a few days, and if, after trial, it is found to be too painful to be borne, inject into the Fistula, just previous to introducing the Potash tent, a tea-spoonful or two of Laudanum.

Next prepare the following Ointment, to be used instead of the Potash: Take Lard and Beeswax, about equal parts, say 2 ounces of each; melt together, and while cooling stir in ½ ounce of Oxide of Zinc and 2 drams of Sugar of Lead, finely pulverized, and stir well to mix. Then after having used the Potash, as above indicated, for a few days, leave that off and use this Ointment, by covering a tent or bit of twine with it and introducing it in the same way; and continue this, applying it morning and evening for several days—always cleansing out the Fistula well first with injections of Soapsuds, and other articles, as recommended. Injections of Lye, or a Solution of Vegetable Caustic, should also be used.

Be careful, when the healing process commences, that the Fistula does not heal up at the external opening too soon. The healing should commence at the base or upper part, while the external part should and must be kept open to the very last—otherwise the disease will not be cured, but will break out again.

When the Fistula is complete (that is, where it extends into the rectum), it will very likely become necessary to use the *ligature*, in order to cut or open the Fistula into the rectum all the way out, and thus make but one common opening of the rectum and Fistula. This is to be done as follows: Take a strong silk cord (saddler's silk will be about the right size), wax it a little, and by means of a probe with an eye in the end, into which pass the end of the silk cord, introduce it up the Fistula until it passes into the rectum; then, with the fingers of the other hand, reach up the rectum, seize the end of the cord, and bring it out through the rectum; withdraw the probe, and then, having the two ends of the cord, tie it, drawing it as tightly as can be borne. This cord is to remain, and each day is to be gradually tightened by drawing it firmer and tying again, or by twisting it with a bit of stick attached to the ends, and thus continued until it gradually cuts or severs its way out, laying open the Fistula. After this is accomplished, there will be but little difficulty in healing up the part, and thus effecting a radical and permanent cure.

But as I before remarked, Fistula is a disease that should require the attention of a physician, or should be treated by some person who has had experience in the matter. Caustic, stimulating and cleansing Injections and Washes, healing and astringent Salves and Ointments, and emollient Poultices, will constitute the principal measures to be employed. The bowels are to be kept in a soluble and regular condition by the daily use, if necessary, of laxatives, as Castor and Olive Oil, fluid Extract of Butternut and Dandelion, Sulphur and Cream of Tartar, and the like, and occasionally laxative injections up the rectum. Should the general health be implicated, tonics, restoratives, and alteratives, are to be used. The Alterative Syrup will, in most cases, be serviceable. If the lungs are affected, or there is a tendency to Consumption, as is often the case, make use also of treatment adapted specially to that difficulty. Let the diet be light, generous, unstimulating, and easily digested. Spirits must be entirely avoided, and take as little exercise as possible.

WHAT TO EAT, DRINK, AND AVOID.

RELATIVE TO THE DIGESTIBILITY OF DIFFERENT ARTICLES OF DIET.—Our journey in this life is beset with temptations, and the stomach, or rather palate, comes in for its share, and it is well that we, who wish to avoid Dyspepsia, should mind these restrictions, and

know where the danger lies, as well as the invalid whose stomach is diseased. For there are a vast number of edibles and drinkables that should be prohibited to a person of feeble digestion and otherwise nervous temperament. I will, for their benefit, enumerate a few articles which should be, if not altogether avoided, at least very sparingly partaken of; and on the other hand, a few that may be depended upon. The following is a list of articles of diet, with the time required for their digestion. Those marked * should be avoided, or eaten very sparingly by the invalid, for it does not follow that that which is the more readily soluble is the most suitable to a morbidly sensitive stomach:

ARTICLES.	HOW DRESSED.	TIME IN DIGESTING.
		H. M.
Rice	Boiled	1 0
Sago	Ditto	1 45
Tapioca	Ditto	2 0
Barley	Ditto	2 0
Milk	Ditto	2 0
* Ditto	Raw	2 0
* Tripe	Boiled	1 0
Venison Steak	Broiled	1 35
Turkey	Roasted or Boiled	2 30
* Goose	Roasted	2 30
* Pig, Sucking	Ditto	2 30
Lamb	Ditto	2 30
Chicken	Ditto	2 45
* Eggs	Hard Boiled	3 30
Ditto	Soft	3 0
* Ditto	Fried	3 30
* Custard	Baked	2 45
* Salmon	Boiled	1 30
Oysters	Raw	2 55
* Ditto	Stewed	2 30
Beef	Roast	3 30
Beef Steak	Broiled	3 0
* Pork Steak	Ditto	3 15
* Ditto, Fat and Lean	Roasted	5 15
* Ditto, recently salted	Boiled	4 30
Mutton	Roasted	3 15
Ditto	Broiled or Boiled	3 0
* Veal	Broiled	4 0
* Ditto Cutlets	Fried	4 30
Fowls	Boiled	4 0
* Ducks	Roasted	4 0
* Butter	Melted	3 30
* Cheese, Old, Strong	Raw	3 30
* Soup, Beef, Vegetables and Bread	Boiled	4 0
* Soup, Bean	Ditto	3 0
Ditto Barley	Ditto	1 30

ARTICLES.	HOW DRESSED.	TIME IN DIGESTING.
		H. M.
*Soup, Mutton	Boiled	3 30
Chicken Soup	Ditto	3 0
*Hashed Meat, and Vegetables	Warmed	2 30
*Sausages, Fresh	Boiled	3 20
*Heart, Animal	Roasted	4 0
*Beans	Boiled	2 30
Bread	Baked	3 30
Dumpling, Apple	Boiled	3 0
Apples	Raw	2 50
*Parsneps	Boiled	2 30
*Carrots	Ditto	3 15
*Turnips	Ditto	3 30
Potatoes	Ditto	3 30
*Cabbage	Ditto	4 30

This list is founded upon experiments made on small quantities. Of course the more there is taken, the more time is required, on account of the suspension of the process of digestion, occasioned by the absolute irritation from the distension of the stomach, as the time varies with the health and seasons, and with perfect or imperfect mastication.

Bringing my own observation to amend or augment the preceding catalogue, I find the following had generally better be AVOIDED by dyspeptics:

Cream,
New Bread,
Hot Rolls,
Fat Bacon,
Green Tea,
Buns,
Sweet Biscuits,
Rich Soups,
Pork,
Beef,
Veal,
Ham,
Mashed Potatoes,
Sausages,
Stuffing of Meats,
Stuffing of Poultry and Game,
Smoked Beef,
Salt Meat,
Peas, Suet, etc.,
Marrow Puddings,
Fried Fish,
Boiled Salmon,
Mackerel,
Shrimp, and other Sauces,
Sprats,
Eels,
Cheese,
Pastry in all its shapes,
Salads,
Raw Vegetables,
Cucumbers,
Radishes,
Lettuces,
Nuts, Walnuts,
Cocoa-nuts,
Almonds and Filberts.

A man of health may partake of every one. This array of "forbidden fruit" is only for "invalids."

There may be many articles of diet omitted, besides new forms are continually being introduced, but the past observations and restrictions apply to those usually of ordinary consumption. Nor is the prohibition applicable to every individual case. I am quite aware that, where general advice is extended over so many pages, the attention of an invalid is very difficult to obtain, and that much time is required to gain over his adherence to what may not accord with his notions, but which, when enforced by the word of mouth from his medical man, he sets about in real earnest to accomplish.

A word or two upon fats; they are all slow of digestion. Mutton Suet takes four hours and a half to digest, and Beef Suet five hours.

Fat, when swallowed, becomes changed into oil by the warmth of the stomach, and floats on the surface of the food therein, until, by degrees, it becomes divided into myriads of little globules, as seen when water and oil are shaken up together, and then gradually mingles with the mass, and thus becomes digested.

Quantity of Food.— The point settled, would, it appears, conclude the instruction an invalid can need. The secret of living certainly rests much on the quantity, but involves several considerations, and the sick pupil must be a diligent observer.

Every person should regulate the quantity by his feelings. He ought to know when he has eaten enough. It is impossible to say with precision, how much in general is requisite for every individual, for our appetite and capacities vary every day. Prisons and workhouses have their dietaries, but I trust my readers may be at least placed in such situations that they can command what they require, and have judgment sufficient to stop or go on, and take their meals when they please. This fact is beyond dispute, that more maladies are created by over-feeding than under-feeding, and it is also true that the majority of us consume more than there is really any occasion for. Every man in search of health should reflect for himself.

The better experiment is, if, on any given day, uncomfortable feelings ensue after dinner, try the next time to satisfy yourself with one-third less — if the same result follow, try the following day one-half; and if diminishing the quantity still more does not succeed, try a day's fast. Dyspeptics accustomed to feed freely will find their health speedily improved by taking less; let their selection be judicious, eating slowly and carefully what they partake of. Above all, as I have remarked elsewhere, simplicity of living should be strictly observed, and the motto on every plate *should* be, "Temperance is true luxury."

Regularity of feeding is of great assistance to a feeble stomach; a man, to be healthy, should keep time like a clock in all his hygienic

duties, and like many of the other daily functions of life, his appetite will, if thus encouraged, always attend him at the accustomed hour.

Our positions in life must modify these proceedings; there is nothing, however, like military regularity. One meal should never succeed another, until the last is pretty fairly digested. Abernethy advised four hours between each. Eating little and often is a bad plan. Hence lunches, and buns, and biscuits, are severally injurious; they spoil the appetite for the more substantial meal, by calling into play — which a simple crust will do — the whole machinery of the digestive organs.

DISEASES OF THE LIVER AND BILE DUCTS.

DISEASES OF THE LIVER.

THE Liver is the largest organ or gland in the body; it is situated in the upper part of the abdomen, immediately below the midriff or diaphragm. It is very subject to disease, and, as its uses are many and varied, it is greatly important not to have it the seat of disease. It is common for persons who are ailing to attribute their suffering, almost instinctively, to liver and biliary derangements. Often there is a great deal of reason in the observation. Much of the bile secreted by the liver and thrown into the alimentary canal, is absorbed there and burned in the body; so that the liver becomes indirectly a source of supply for animal heat. The bile, if not duly applied and so gets returned into the circulation as bile, becomes a poison to the blood and a cause of depression to the spirits, and when in the blood in large quantities produces the yellow discoloration of the skin called jaundice. In the liver there is a transformation goes on of the matter derived from the digested food into a substance called glycogen, which is easily changed into grape sugar. Irregular nervous action may cause this process to be improperly carried out, so that glucose may form and be given to the blood in excess. Thus the liver indirectly may cause the disease known as diabetes, manifested in the discharge of saccharine urine.

The Liver is often the receptacle of metallic, vegetable and alcoholic substances of a poisonous character; these may remain in the system for a long time, as would seem from careful researches made, and these

will be thrown out by the liver into the alimentary canal, to make the round of the circulation, and be returned again to the liver for re-elimination. The liver is often a centre for the growth of parasites. It is frequently the seat of vascular congestion, during which it increases in size, causing serious discomfort, and pain which is spoken of as in the right shoulder. With this congestion there is always dyspepsia and flatulency, derangement of the bowels, and not uncommonly piles. When the congestion is great there is always a pasty and bloodless look of the skin, and it most usually occurs in persons of sedentary habits, and especially in such persons when they indulge in stimulants and in rich food. In "Hob Nail," or "gin-drinker's liver," the liver contracts gradually, and so ceases to secrete bile. Probably in no way is the connection between the Stomach and Liver more strongly manifested than by the manner in which the latter is affected by the inordinate use of *Spirituous Liquors*. In this case, the spirit being absorbed directly from the stomach by the veins, and conveyed at once to the Liver, acts very powerfully upon it; particularly if the form in which the Alcohol is taken be that of pure spirit, such as Brandy or Whisky. In this instance, if the use of the spirit be persevered in for a length of time, a low form of inflammation is excited in the substance of the glands, which ends in the formation of abscess, produced by its excessive use, and which proves fatal to thousands in this country annually. This great cause of Liver Complaint should be strongly impressed on the minds of all who are addicted to Intemperance, or using spirituous liquors to excess. The bile is formed from the blood which has circulated through the organs within the abdomen, and which passes through the Liver on its way back to the heart. In this passage the bile is separated from it, thereby purifying the blood, and affording a secretion which performs an important part in the process of digestion, and in the body at large. This intimate connection, however, of the Liver, by means of the blood, with the other organs within the abdomen, and particularly with the stomach, renders it extremely liable to be disordered; and, indeed, there are few cases of disorder of the stomach or bowels, in which the Liver is not in some degree implicated, either primarily or secondarily.

The Liver weighs, on the average, in man, about four pounds, and occupies the whole right hypochondriac region, a part of the left, and the upper half of the right epigastric region. Its length is about ten inches, and its width six or seven. The principal part of the right side, called the lobe, is covered by the lower ribs of the right side; and the small, or left lobe, is over the stomach on the left side of the median line, being bounded on this side by the spleen. The quantity of bile secreted by a man is from seventeen to twenty-four ounces daily;

by a large dog, thirty-six ounces; and by a horse, thirty-seven pounds —far exceeding in weight the fæces; or, in plainer language, that which is discharged by an operation from the bowels—and from forty-five to fifty-six times as much as can be found in the fæces by chemical analysis. Inflammation of the liver is much more frequent in warm climates than in cold ones, and, however caused, is attended with high fever, pain, and serious disturbance in the abdominal region.

Biliary Disorders, arising from a derangement of the Liver, are so frequent, that those who are more or less subject to such Bilious Complaints, by which the general health is greatly impaired, should strictly attend to the prevention, or at least alleviation, of these accompaniments of a diseased state of the Liver; and which, as they are so much under individual control, have special claim upon our attention. Some individuals are so constituted that they have a much greater tendency to biliary disorders than others; particularly those who suffer habitually from sick-headaches — which arise generally from the presence of bile in the stomach — and from other forms of biliary disorders common to this country, which are generally traceable to improper diet, eating rich food, such as fat bacon, rich gravies, melted butter, pastry, etc., and indulging too freely in spirituous liquors, while, at the same time, very little active exercise is taken; also not unfrequently from the cares of business, by which the mind is overtaxed, and from which the health becomes impaired. We should remember there must be a certain balance maintained between the secretion and ultimate destination of the bile, if we would retain our health; for the blood becomes overloaded with carbon; languor, sleepiness, headaches, giddiness, loss of appetite, furred tongue, and depression of spirits, are the consequences; and these continue until, at last, the symptoms are relieved, wholly or partially, by an excessive excretion of vitiated bile, which passes off either by vomiting or purging.

That deficient exercise has much to do with the formation of such a state of the system, is evident from the much greater prevalence of such attacks among females, who take little exercise, than among men; and, indeed, they would be still more prevalent among women, were it not for the monthly relief or courses. Habitual neglect of the skin, by not bathing frequently, assists to impede or stop the excretion of carbonic acid from its extensive surface, and undoubtedly assists the evil.

From what has now been said, it is evident how much the avoidance of biliary disorders is under individual control. The question is, in reality, *not one of medicine*, but of diet and regimen. Medicine may certainly be required; but not by any means to the extent it is

so often used. Those persons who are habitually liable to biliary disorders, arising from a diseased state of the Liver, ought most strictly to regulate their diet, avoiding coffee, strong tea, and all stimulants; to use plain food, take plenty of exercise, and keep the skin clean by the frequent use of the bath and friction; as the sympathy between the skin and internal organs, particularly the Liver, Lungs, and Kidneys, is very great; they all sympathize and intimately coöperate one with the other, being alike subsidiary to the grand object of removing the impurities of the blood. This is the reason why, in this state of the system, alteratives, evacuants, or, in plain language, purgatives, are so frequently given; and why decided advantages are often found at watering places, where sometimes the most salutary and beneficial effects are produced, when medicines have entirely failed.

I have indeed known a change in the mode of living frequently to obviate the necessity of using medicine; and my experience has taught me, that a plain diet and plenty of exercise are much better than a constant repetition of physic, which is merely, in many instances, a correction of improper indulgences.

Treatment. — When the bowels are confined, usually termed a *costive* state of the bowels, 1 pint of warm Water, 1 table-spoonful of Salt, and 1 tea-spoonful of hog's Lard, as a clyster, will give relief or take 1 or 2 of the Liver Pills at bed-time. (See page 1134.) When, from any cause, the languor, sleepiness, furred tongue, etc., give notice of an impending bilious attack, 4 or 5 of the Liver Pills should be taken at night, and followed in the morning by a dose of infusion of Senna and Salts, or a dose of Castor Oil. Extract of Dandelion made into pills, with 1 grain of Leptandrin to each pill, one taken every night, is an excellent remedy. From a long practical experience, I have found that the *Dandelion* is a most valuable medicine for this complaint. I have before told you, in my former work, *Gunn's Domestic Medicine; or, Poor Man's Friend*, that there are herbs to cure all diseases, provided by our Heavenly Father, if we would but seek them out and test their virtues. But experiments on this subject have been too much neglected to afford us all the information we need. I have found the use of the Dandelion in the treatment of this disease to be a most valuable remedy. Indeed, I may here observe, that in the treatment of Liver Complaint, the same precautionary remarks as those on indigestion, will also apply to this disease — that sick-headache, foul tongue, or heaviness in the region of the stomach, will indicate the necessity of giving a mild emetic of Ipecacuanha; and should there be great heat, inflammation, or feverishness, the use of warm Lemonade, or a dose of Salts mixed in warm Water, and bathing the feet in warm Water, so as to produce perspiration, or determination to the surface, will afford relief. Should the bowels be costive, regulate them with the following valuable pills: Take extract of Butternut, 30 grains; powdered Jalap,

20 grains; Soap, 10 grains. Mix. Make fifteen pills. Three or four is a dose. The extract of Butternut has been found one of the best cathartics in fevers, and as a general purgative medicine.

Dr. James Wilson, in the *Medico-Chirurgical Review*, says: "The more the Dandelion is employed, the more certain proofs it will afford of its great virtues" — a fact to which my experience enables me to testify. In my own practice, more than a hundred cases have been cured either by the simple extract of the herb and root, or by taking a tea-cupful of a strong decoction of Dandelion twice a day. In almost every instance I have succeeded in relieving and restoring those who have used this most valuable plant of the fields.

The Dandelion is diuretic and aperient, and has a direct action upon the liver and kidneys when languid; and is likewise applicable to all derangements of the digestive organs generally. In chronic Inflammation of the Liver and Spleen, in cases of deficient Biliary secretions, and in dropsical affections of the Abdominal Viscera, or belly, it will be found very beneficial. The inspissated extract is the most efficacious and active form of using this plant, and may be purchased at any drug store; the doses of which are from 10 grains to ½ a dram. I have, however, generally used it in a decoction, as before mentioned. See the "Medical Flora," page 839, for a further and more full description of this valuable plant, medically called *Leontodon Taraxacum*, which, in plain English, means lion's teeth; so called from the indentations of the leaves. A dram or two of Sulphate of Magnesia, *Magnesiæ Sulphas*, with a little Hydrochloric or Sulphuric Acid before breakfast, is of service in this condition, just to promote the action of the bowels. Do not, however, give violent purgatives or attempt to cure the disease off-hand by any course of special treatment. A mustard poultice may be placed over the region of the liver every day, or every other day, for twenty minutes. Another local application which seems to be of use, and which I learned from Dr. Blakiston, is Hydrochloric Acid applied on rags. The strong acid is diluted with twice its bulk of water. A rag carefully wet with the lotion is placed over the liver, and then covered with some useless rags or an old towel. This application may be used each alternate day, care being taken that the acid is not allowed to spoil any linen or the clothes of the patient. It produces only a little tingling. The skin should be wiped with a soft, wet sponge when the rag is removed.

JAUNDICE.

THE older physicians gave the name of jaundice to what they considered was a specific disease, manifested by universal yellowness of the surface of the body, with or without fever, with much depression, and in the worst cases with coma—sleepiness—ending in death. They connected the disease with the circulation of bile through the blood, and we do the same, but we differ from them in that we consider jaundice to be

A Symptom of disease rather than a specific affection. Jaundice, in fact, accompanies many diseases, acute and chronic, though it is naturally most intimately connected with diseases of the liver and the gall-bladder. The symptom may be caused by obstruction to the course of the bile from closure of the gall-duct; by over-secretion of bile, or from failure of the process by which the bilious matter, brought by the blood into the systemic circulation, is utilized. Thus there is a true hepatic or liver origin of jaundice, and a systemic origin. The first is connected with hepatic disease; the second, with other diseases of a more general character, such as bilious remittent fever, pyæmic fever and yellow fever. Jaundice, though not a definite disease, is often a dangerous complication of other diseases. It tells us that bile, which in itself is a poisonous product, is circulating in the blood, and is acting as a direct source of danger.

Among the SYMPTOMS often present is a bitter taste in the mouth, with loss of appetite, and perhaps sourness and sickness of the stomach, while the stools are of a light ashy hue, and the urine of a deep yellow. Perhaps the sufferer gets thin and has no relish for food. What he does eat does not nourish him properly. Some persons get on fairly well with this upon them, but it must not be forgotten that in some instances cases run to a fatal termination in the course of two or three weeks which at the commencement could not be distinguished from a trivial form of the difficulty.

On dissection of those who have died of this disease, the whole body is found filled with bile. The fatty portions of the body, as well as the bones, muscles, and membranes, are found of a deep yellow color. In this complaint, the bile is diverted from the bowels, its natural passage, and absorbed, or taken up, by the lymphatic vessels, or the secretory terminations of the veins, and diffused over the whole body.

The bile issues from the Liver through a duct or passage the size of a goose-quill, which leads into the bowels, a short distance below the stomach, about four or five inches. This little duct or vessel, which is constructed like a vein, and conveys the bile as a vein does the blood, receives the bile from a smaller vessel called the *hepatic duct*, and also from another duct which leads to the gall-bladder, called the *cystic* duct. If either of these three ducts become obstructed or stopped up by the thickened or viscid bile, or by gall-stones, which frequently form in the Liver, or by any thing which irritates these ducts, and causes them to contract, the Jaundice will, to a greater or less extent, be produced. The hepatic duct and the common duct which lead into the intestines, become filled with bile, which, having no outlet greatly distends them, and causes more or less pain and

soreness, sometimes being very painful. This is generally owing to the distension of the gall-bladder and the three bile ducts which I have before fully described to you. When the urine is obstructed or stopped, it produces the greatest uneasiness and pain. This disease is frequently produced by nervous affections, such as the hysterics, hypochondriacism, and violent mental excitement, when it is called Spasmodic Jaundice; also by costiveness, and by irregular habits of living, particularly with those who are predisposed to this disease. The bile ducts are closed from the effects of these nervous affections, which finally block up the passages into the intestines. Mental excitement and nervous affections produce this disease in thousands of cases: excessive heat, and marsh miasm, or damp, unhealthy locations, have more or less influence on such temperaments in producing and aggravating this complaint.

Treatment.—No medicines are more beneficial in Jaundice than *Emetics* occasionally repeated, and followed by gentle purges of Rhubarb, or Epsom Salts. I have, in this disease, given an emetic every other day, for a week or a fortnight; for a simple vomit rarely relaxes the system sufficiently to produce a permanent flow of the bile. The first vomit, give 20 or 30 grains of Ipecacuanha in six table-spoonfuls of Warm Water, followed by a dose of the common Physic Pills, or an active dose, say 4 or five, of the Liver Pills, or any good active physic. Blood Root or Puccoon Root, in tincture, 30 to 80 drops to a dose, has been highly recommended in this disorder. The Thoroughwort is an excellent remedy in the Jaundice. Not less than two tea-cupfuls of the strong tea should be drank at a time, and this should be repeated every day for a week or a fortnight. While the Thoroughwort is being taken, if it operates well upon the bowels, no other medicine need be used. The inner bark of the Barberry, steeped in Cider, is a valuable remedy in the Jaundice.

I have used Sweet Oil with great advantage in this disease, after the administration of an Emetic. Not less than ½ pint of the Sweet Oil should be taken through the course of the day, until the stools or fæces become of a healthy color. Two gills of it may be drank morning and evening. Children afflicted with this disease should drink of it in proportion to their age. Castor Oil, in some cases, may suit better, and may be used in place of the Sweet Oil; the dose, however, should not be more than 1 ounce at a time, and in smaller proportions for children. A drink, made by adding 3 drops of Muriatic Acid to 3 drops of Nitric Acid, or *Aquafortis*, and mixing both in a tumbler of Cold Water, has been found a valuable drink in assisting other medicines in the cure of this complaint. This should be well stirred up, however, before using it, so as to make an agreeable sour drink, similar to Lemonade, and may be taken twice or three times a day, as the thirst demands, or as it agrees with the stomach. The Warm Bath, if used daily, has a powerful effect in relaxing the bile ducts, and turning the bile into

its right channel. The professional remedies are generally: Calomel and Jalap, 10 grains each at a dose, or 5 to 10 grains of Blue Pill, once a day. I used to follow this treatment, but later experience has taught me that there are other and safer remedies that are much more efficacious and certain. Use the Liver Pills, or any pill or powder containing a portion of the Mandrake and Red Puccoon Roots or Extracts, in mild doses, once a day, sufficient to keep the bowels open or lax, and to act gently on the liver; and at the same time take the bark of the root of the Peach-tree, and Wild Cherry-tree Bark, and make strong Bitters in Whisky or Gin, and use this freely three or four times a day, and continue it, and it is sure to cure. I have never known it to fail. A strong decoction or tea of Peach-tree Leaves, taken say half a pint a day, is also good. The tincture of the Blood Root or Red Puccoon, as I have already mentioned, is a valuable remedy in this disease, and will generally itself effect a cure. A portion of this root may be added to the Cherry and Peach-tree Bitters. You can rely on these Bitters. You should make at least a quart at the start, and as strong as you can; and then take from one to two table-spoonfuls at a dose, three or four times a day. Keep quiet, and keep the body clean, by bathing or sponging once a day with Warm Saleratus Water, and rubbing well all over. Continue the Liver Pills, one or two at bed-time, and a few days will soon produce a change for the better. A strong decoction of the Dandelion Root is also a good remedy in this complaint. It may be taken freely.

The Acid Bath, composed of 3 parts of Muriatic and 2 of Nitric Acid, made about the strength of weak Vinegar to the taste, is a powerful and useful remedy in this disease.

It has lately been discovered, and proved by experience in some of the most obstinate and apparently incurable cases of Jaundice, that the simple remedy of raw Eggs will often effect a cure. Two Eggs are to be taken at once in the morning, in pure Water, and afterward one Egg every four hours.

Dr. Johnson, of London, announces in the *Medical Journal*, that he has succeeded in curing several very severe cases of Jaundice by pills made of inspissated juice of Ox-gall, given in doses of 5 grains, gradually increased to 10 grains, three times a day. This remedy can generally be prepared at any drug store, or at any apothecary shop.

Females are sometimes affected with Jaundice in the middle months of pregnancy, in consequence of the womb pressing some of the viscera against the gall-ducts. It frequently disappears in the latter months, from the womb changing its bearing and rising higher. At all events, it need not create any uneasiness, as it vanishes after delivery. Medicine is of little use in such cases. Mild laxatives, and lying on the left side, are the only means that need be resorted to.

Each day unfolds some simple and valuable remedy of nature adapted to our various diseases. As an evidence of this fact, it may be stated that common Soot, scraped from the chimney, inclosed in Linen, and boiled in Water, makes a liquid or drink which will be

found quite efficacious and valuable in Jaundice. It may be taken alternately with the other medicines recommended.

Many persons, particularly residents of the Southern States and warm climates, are great sufferers from a redundancy of bile destroying the digestive organs and affecting the liver. Such persons should depend upon prevention more than cure, and make use only of a diet that will prevent the accumulation of bile — for example, Pepper Sauce, Mustard, stewed Fruit of various kinds, and sound hard Cider. Much exercise should be taken to excite a healthy action of the digestive organs. It will be absolutely necessary to abstain from all kinds of greasy Meat, Sweet Articles, Pastry, rancid Butter, and Coffee, as these articles increase bilious affections. Costiveness must invariably be avoided. When a person finds himself laboring under a bilious complaint, he may take an emetic, and afterward some of the *Bilious Pills* I have before mentioned.

Scirrhous enlargement of the viscera is frequently the consequence of the abuse of spirituous liquors, and drunkenness may be enumerated as the cause of this disease in thousands of instances. The drunkard should look into a glass, and there behold the various gradual changes in his countenance. The first stage would present him with redness of the eyes; the second will exhibit the carbuncled nose and swelled face; the third, the obstinate Jaundice, which will probably, in a short time, terminate his wretched career.

It is remarkable that, in many constitutions, mostly in women, Jaundice is often produced by jealousy and anger, and, in men, by mental emotions, such as avarice, or love of money, mental depression, and over-taxing the mind in business. These causes produce obstructions of the bile in the natural channel, and cause derangement of the *liver* and *stomach*, affecting the mind and the whole nervous system. Persons subject to this disease should be very particular in avoiding all mental depression or uneasiness.

DISEASES OF THE SPLEEN.

INFLAMMATION OF THE SPLEEN.

SYMPTOMS.—Acute Inflammation of the Spleen is characterized by heat, pain, and some swelling in the left side, immediately below the ribs, with more or less fever. The pain is increased by pressure, and it often comes on with a shivering, like that of Ague, followed by heat and great thirst. It is often connected with the Ague, or Chills and Fever, and is not unfrequently a result of that disease. It results also from the continued use of Quinine. Persons of a plethoric and

sanguine habit of body are most subject to it. It is also very liable to become chronic.

Treatment. — Commence with a Hydragogue Cathartic, the Anti-bilious Physic, or Mandrake, with Cream of Tartar. Make use of measures to produce perspiration — a good sweat, if possible. Apply stimulating Liniment and warm fomentations to the part. The purgatives should be repeated every second or third day, and if relief is not soon obtained, give an emetic. Bathe the feet in warm Lye Water and apply a Mustard Plaster over the part.

This disease sometimes becomes chronic, in which case the Spleen becomes enlarged and hard, forming what is sometimes called an "Ague-cake." In this case apply a Plaster, and renew it occasionally, made of the yellow of Eggs and Salt. The best results frequently are shown in the use of Holman's Spleen Belt.

DISEASES OF THE ORGANS OF RESPIRATION.

COLDS AND COUGHS.

COLDS are the effect of obstructed perspiration. The causes and symptoms of this disease are so well understood, that little need be said. Oppression of the breast, stuffing, or stoppage, of the nose, sneezing, weariness, chills, pain in the head, and cough, are the usual attendants. But few diseases require more attention than this, and yet few are more generally neglected. How many, when they take Cold, consider it of no importance, and let it run on, without reflecting a moment on its consequences! Remember, that neglected Colds are frequently dangerous, and often result in incurable diseases. A Cold produces Cough, then comes pain in the Side, Fever, difficulty in breathing, and finally ends in Consumption.

Many serious attacks of fever begin just like an ordinary cold; similar phenomena are shown during the first manifestations of either disease, therefore be careful.

Treatment. — Open the bowels by a dose of Epsom Salts, in a tumbler of warm Water, on going to bed; soak the feet in warm Water and drink some warm herb tea, such as Sage, Catnip, Balm, or Pennyroyal, and get into a good sweat.

Use for the Cough the following mixture, which is very pleasant to take, and generally effects a cure: Boil ½ pint of Milk, 1 tea-spoonful of Black Pepper, and a small lump of Butter. To be taken hot on going to bed, and to be repeated three or four nights, if necessary.

For Hoarseness. — You will find Horse-radish an excellent remedy for Hoarseness, Cough, Sore Throat, and all diseases of the lungs. Chewing a small piece, the size of the little finger, restores the voice, when so hoarse as scarcely to be able to articulate above a whisper.

For a Cough, you will find the following a valuable remedy: A syrup made of Life Everlasting and Boneset, both well known by every farmer; boil these two articles in Molasses, and take a table-spoonful when the Cough is troublesome.

Besides trying to excite perspiration, endeavor to cause various eliminating organs to act freely. Give unirritating diuretic remedies, such as *Liquor Ammoniæ Acetatis*, *Citrate of Ammonia*, *Citrate of Potash*, *Nitrate of Potash*, and *Chlorate of Potash*. These all act upon the kidneys, and increase the flow of urine; some of them act upon the skin, and promote the removal from the blood of noxious substances accumulated in it. Take a large teaspoonful of Flaxseed, and five cents' worth of Extract of Liquorice, and a ¼ pound of Raisins; put these articles into 2 quarts of Soft or Rain Water, and let it simmer over a slow fire, till it is reduced to 1 quart, or near it, then add to it a ¼ pound of Brown Sugar. If you make the Brown Sugar into candy, and pound it before putting it in, it is better than the Sugar in the way I first told you. Add to the quart of syrup 1 table-spoonful of Vinegar, or 1 table-spoonful of Lemon Juice. Drink a ½ pint, or a large tea-cupful, on going to bed, and take a little when the Cough is troublesome.

Or, bathe the feet and legs in warm Water, on going to bed, and take the following pleasant mixture: 1 table-spoonful or more of good Whisky, and 1 small tea-spoonful of Butter, Sugar, and Nutmeg. Fill the cup full of boiling Water, stir it up altogether, and drink this as hot as you can, and go, after bathing your feet and legs, to bed, and this will produce an agreeable perspiration, or sweat, and relieve your Cold.

INFLUENZA.

THIS disease is characterized by an increased secretion of mucus from the membranes of the nose, mouth, and bronchial tubes, attended with sneezing, cough, thirst, fever, and loss of appetite.

Causes. — It is generally epidemic, or endemic, prevailing throughout a certain district, and affecting usually a large proportion of the inhabitants; hence, it is supposed, in such cases, to be owing to a certain peculiar condition of the atmosphere at the time. When it appears in a mild form, it is not considered dangerous; but when it rages as an epidemic, with highly inflammatory symptoms, and is not attended to in time, unfavorable and sometimes fatal consequences may result.

Symptoms. — The disorder usually commences with sneezing, coughing, and chills, succeeded by heat, hoarseness, sore throat, followed with pain or soreness in the lungs and stomach. There will be increased expectoration of mucus, running at the nose, pain in the chest, back, shoulders, and head, especially in the forehead. The

eyes become red and bloodshot, and there is general debility and weakness.

Treatment. — Let the patient drink freely of Boneset and Hoarhound Tea, bathe the feet two or three times a day in warm Lye Water, and take the Vapor Bath once a day, and a very few days will generally suffice to break it up. If there is much difficulty in expectorating, or in breathing, give occasionally a tea-spoonful of Tinctures Lobelia, Blood Root, and Wine of Ipecac.

For Cough and Sore Throat, give the following: Take 1 tea-cupful of good Vinegar, add half as much Honey, and 1 heaping tea-spoonful of Cayenne; simmer a few minutes over the fire, and when cold, give 1 tea-spoonful occasionally, or whenever the Cough is troublesome. It is a splendid remedy, and acts almost like a charm. A purgative should also be given.

CATARRH.

WHEN under irritation there is an excessive flux or discharge from any secreting or excreting surface of the body, the term catarrh is employed to express the fact. This term indicates that the natural discharge is being thrown off in excess. In common cold there is an excessive secretion from the nostrils, presenting what is called nasal catarrh. When there is discharge of mucous fluid from the bladder, *vesical* catarrh is shown. With free secretion and expectoration of phlegm from the bronchial tubes without inflammation, *bronchial* catarrh is present. The condition is an outpouring or defluxion.

COLD IN THE HEAD.

CATARRH, OR COLD IN THE HEAD, is a milder form of Influenza, affecting the nostrils and windpipe, giving rise to more or less pain and fullness in the head; sometimes attended with slight fever, chills, or shiverings, frequent sneezing, cough, hoarseness, and running at the nose.

Treatment.—Generally very little treatment is necessary. It may be well to take a good Vegetable Physic, bathe the feet in warm Lye-water, on going to bed, and drink freely of some warm Herb Tea, or of Composition Powder, and take a dose of Diaphoretic or Dover's Powder, and thus sweat it out. A very good plan in addition to this is to "starve it out;" take very little food for a few days.

CHRONIC FORM.

From neglect of the acute form, or from repeated attacks, or from other causes, as a sequence of Scarlet Fever, Measles, and the like, Catarrh of the Head may become chronic, and very obstinate, giving rise to severe pain in the head and eyes, watering of the eyes, trouble-

some cough, excessive discharge of mucus from the nose, frequent sneezing, loss of appetite, emaciation, and the like. The disease in this case has become seated in the mucous membrane of the nostrils, and the

Treatment should consist mainly of applications to that organ—such as powders snuffed up the nose, the inhaling into the nose and throat Medicated Vapors, and the like. A snuff composed of equal parts of Pulverized Bayberry, Blood Root and Peruvian Bark, a little of which should be snuffed up the nose several times a day, or used as a constant snuff, will be found excellent. In addition to this, boil a handful of Hops, Catnip, Hoarhound, and Chamomile Flowers, in a quantity of Vinegar, and inhale the warm vapor arising from the decoction through the nose, several times a day; and if the throat or lungs are also affected, inhale the same through the mouth also. Other herbs may be added, or substituted, if convenient. Mullen, Horsemint, Mayweed, and Jimson Leaves are good; so, also, is a decoction of Spicewood Boughs and Twigs, also Pine Leaves.

The bowels should be kept loose, by an occasional purgative; the skin properly attended to, by daily bathing the surface of the body with the warm Alkaline or Saleratus Bath, rubbing well with a dry, coarse towel; and the use of diaphoretics, to act gently upon the skin and induce free perspiration. The Diaphoretic Powder, in 20 grain doses three times a day, will be very good. The patient may also drink freely of Composition Tea at night, on going to bed.

If there is much cough, use Tinctures of Lobelia and Blood Root, Wine of Ipecac and Syrup of Balsam of Tolu, equal parts, in teaspoonful doses, several times a day; or any of the more approved Cough Mixtures or Powders. If the eyes are weak, bathe them frequently in cold water. In obstinate cases, take a thorough emetic once or twice a week.

QUINSY, OR INFLAMMATORY SORE THROAT.

THIS is a disease of the Tonsils and Mucous Membrane of the Throat. It is most common among young persons.

Causes.—The most common causes are a sudden cold; check of perspiration; wet feet, damp beds, moist, cold air, and the like. The disease generally occurs in the spring, and sometimes, like Influenza, prevails as an epidemic.

Symptoms.—The more common symptoms are, Sore Throat; difficulty, with pain, in swallowing; redness and swelling in one or both of the tonsils; dry throat; foul tongue; hoarseness; difficulty in breathing, and more or less fever.

As the disease advances, the throat swells, and swallowing and

breathing becomes more difficult; the dryness of the throat and thirst increase; the tongue swells, covered with a dark, crusty coat; the pulse is full, hard, and very frequent; hearing becomes impaired, sometimes complete deafness occurs, owing to the swelling of the tonsils, or as they are sometimes called, the "almonds of the ears." Sometimes the throat swells so that swallowing is almost impossible, and the patient is threatened with suffocation. The disease generally terminates in resolution; that is, it gradually yields and goes away, but it sometimes ends in suppuration, or gathers and breaks.

It is of the utmost consequence to watch very carefully cases of Sore Throat, and especially so in persons of low health, when an epidemic of Diphtheria or other throat trouble is in your vicinity.

Treatment.—In the early stage of Quinsy it is best to give an emetic. Let it be of Lobelia, or Lobelia and Ipecac combined. This forms the common emetic, and there is none better, nor so good. Let the patient, while taking the emetic, drink warm Sage Tea. Sage is a sort of specific in this disease. Boil for half an hour a handful each of Hops, Wormwood, Sage, Boneset, Hoarhound, Catnip, or at least three of these articles; and let the patient steam his throat over them, as the hot vapor rises. Put some of the same in a coffee-pot, with some Vinegar added, and let him inhale the vapor in the mouth, throat, and lungs, as warm as he can bear. This will give immediate relief.

As an external application, make the following liniment: Take Oil of Sassafras, Sweet Oil, Spirits of Hartshorn, Spirits of Camphor, Oil of Pennyroyal, Tincture of Cayenne, and Spirits of Turpentine, of each 1 ounce. Bathe the neck and throat with this frequently, and apply a piece of flannel around the neck.

The following gargle is also excellent, and should be used, or something similar to it: Take a small handful of Sage, and as much Sumach berries or bark; boil in 3 pints of Water down to 1; then add a heaping tea-spoonful each of pulverized Alum, Borax, and Saltpeter, strain and sweeten with Honey. Gargle the throat with this frequently, and occasionally let the patient swallow a little of it. Indigo Water is also a good gargle; so is a decoction of Sage and Vinegar, with a little Borax dissolved in it.

An old and infallible remedy, if the throat and tonsils are much swollen, is to simmer a quantity of Sage in a little Lard, and give the patient from a tea-spoonful to a table-spoonful, three or four times a day, as warm as can be borne. This is also good to apply externally, mixed with a roasted Onion poultice.

The principal danger in this disease is from suffocation, caused by swelling of the throat. It will be well to repeat the emetic; and if the throat is much swollen, give it slow, in small doses, to relax the system; after which, give in larger quantities. Cathartics should also be given, and the feet frequently bathed in warm water.

PUTRID SORE THROAT.

THIS disease differs from the Quinsy in the fact that there is not so much swelling in the throat, and consequently not that difficulty in swallowing. There are also cankers, sores, and ulcers in the back part of the mouth and throat. It is attended, also, with more or less fever, chilly sensations, hoarseness, and sometimes vomiting and purging. The disease is sometimes very malignant and dangerous; the ulcers change from an ash-color to a livid, and then to a black; when, if not checked, putrid symptoms appear, followed by gangrene, resulting in death in a few days. The symptoms are very similar to those in malignant Scarlet Fever.

CAUSES.— The cause of this disease is supposed to be a specific contagion. At any rate it is often communicated in this way. It will also arise from cold and exposure, in persons predisposed to the disease.

Treatment.— This is a dangerous disease; and yet, if properly treated, is very easily cured. In the early stage, give an emetic; and if the bowels are not already quite loose, a cathartic also. Bathe the throat externally frequently with No. 6, or Tincture of Myrrh and Cayenne. The same Liniment recommended for Quinsy may also be used. The patient should frequently swallow a spoonful of *Hop Yeast*, and if the pulse sinks, and the patient becomes very weak, the system may be stimulated by giving also some Porter, Ale, or strong Beer.

As a specific, take a table-spoonful of Cayenne, as much common Salt, and simmer them a few minutes in a pint of Water and good Vinegar, equal parts; when cool, strain, and give of this a table-spoonful once an hour. A plaster of the common Rosin Soap is very good to apply warm on the throat.

The following gargle should also be used: Take Sumach Berries (or the Bark of the Root), White Oak Bark, Red Elm Bark, and Blackberry Root, a handful of each; make a strong decoction; add to a pint a lump of Alum the size of a walnut, and, when cool, strain, and use it as a gargle, and apply it to the ulcers frequently. It is an infallible remedy.

DIPTHERIA.*

THIS seems to be considered, both by the profession and the people generally, as a new or modern disease. This, however, is a great

*This chapter does not properly belong in this division, but it is placed here because most readers will look for it in this connection.

mistake. By a careful investigation into the medical records of the past, it will be found that this seeming new disease existed as an epidemic in the city of Rome, A. D. 380; also, that it raged in Holland in 1337; in Spain in 1600; in Naples in 1509; and in New York in 1611, and again in 1771, and in most cases was extremely fatal. But having occurred only at periods so remote from each other, and generally but for a short time, and not having occurred anywhere that we know of, especially in this country, for nearly a hundred years, it is not to be wondered at that it had been lost sight of by medical authors, and that it should now be considered very generally as a new disease. But whether new or old is of but little consequence: the main thing is to know how to treat it, and especially how to cure it.

SYMPTOMS. — Diptheria is a peculiar kind of Sore Throat, though in some respects it resembles both Croup and Quinsy, yet in others differs so much from them that it need never be mistaken for either. It is most common among children, though grown persons are quite liable to it. The patient is most usually, perhaps, taken in the morning, and generally with sensations as of an attack of cold in the head, being somewhat drowsy, a weariness through the joints, and usually more or less soreness of the throat, difficulty of swallowing, and of turning the head. A peculiar symptom is a sort of uneasy sensation, or stinging pain, just inside the throat, *opposite the angle of the jaw-bone and under the ear, as though there were some small object lodged there.* Soon there will be considerable swelling and hardness of the glands of the throat; the face appears bloated or swollen; the eyes perhaps a little red, swollen, and moist. The inside of the throat, at this stage, will be found quite red, in children of a rose color, while in grown persons more purple or dark red; the uvula or palate becomes swollen and elongated, and there is generally a discharge of watery matter from the nose, but no sneezing or cough. Usually there is but little fever, perhaps not any; but in some cases the disease is very sudden and alarming in its attacks, exciting the apprehension of patient and friends, and may terminate fatally even in a few hours. In such cases the symptoms are all intense.

The next symptom that may be noticed, is the appearance of a whitish spot, apparently somewhat swollen, back in the fauces or throat, perhaps several such spots; soon these spots will run together, and form what is called the *diptheric pellicle.* These patches, somewhat like ulcers, though generally of a whiter appearance, may be located on the pharynx, the tonsils, or the uvula. As the disease progresses, the diptheric pellicle, which is a sort of white, false membrane, extends more or less over the fauces, or back part of the mouth and throat, and swallowing becomes very difficult; the glands of the

neck and under the jaw become more swollen; the tongue is pressed forward and upward, the saliva escapes from the mouth, and the breath of the patient is generally very offensive. Swallowing now, especially of fluids, is very difficult, and dreaded by the patient. If he sleeps, he will often awake with convulsive coughing, caused by the saliva escaping into the windpipe instead of passing into the œsophagus or throat. This disease may be known from Quinsy by the manner in which the patient swallows — it being difficult to do so in both cases. In Quinsy, the patient usually shuts the eyes, leans the head forward, and swallows with a quick, spasmodic effort or jerk; while in Diptheria, the face and chin are raised, the eyes stare wide open, and the act of swallowing is done as slow and easy as possible, so as apparently to allow the substance to be swallowed to pass along the tongue slowly over the epiglottis to the œsophagus. The act of swallowing in Quinsy, as well as in ordinary Sore Throat, seems to cause severe pain; while in Diptheria pain does not seem to be the cause of the difficulty.

Diptheria may be easily known from Croup, from the fact that it is not attended with cough, while a peculiar sort of cough is one of the characteristics of Croup. In Diptheria the nose also seems to be stopped up, or discharges a watery, transparent fluid, which gives to the voice a sort of nasal character, not met with in Croup, Quinsy, or any other form of Sore Throat.

In the course of the disease, if it yields to treatment, or the constitutional strength of the patient, that is, as the patient grows better, this pellicle or white membrane peels off in spots or in strips, and is discharged from the mouth along with the saliva; sometimes in quantities really astonishing. And it may be that after one pellicle has thus been thrown off, another, and even a third one may be formed, generally whiter and thinner than the first, and finally thrown off in the same way. After this diptheric exudation or pellicle has been thrown off, the parts from which it has been removed will appear shrivelled and greatly shrunken, as though a portion of the substance had been removed. Yet it will be found, on examination, that no abrasion of the surface, or ulceration, has taken place.

Treatment. — This is in many cases a very dangerous disease, yet it may be very successfully treated in almost every case, if taken in time, and that, too, with very simple remedies. All active, harsh, or depleting measures should be avoided, as not only unnecessary, but actually injurious. Avoid, therefore, blood-letting, active purging, and emetics. Eat nothing but a little of the mildest kind of food, as Gruel, Porridge, Custard, soft-boiled Eggs, boiled Rice, and the like; remain quiet in a warm room, and drink no cold water. Apply a bandage of several thicknesses of flannel around the throat and jaws,

wet with a strong solution of common Salt, in warm Water, sprinkling freely of Salt between the folds of the flannel, so as to keep up its strength and moisture; renew the application frequently, as warm as can be borne, and continue it for several days. Bathe the feet in warm Water, with plenty of ground Mustard in it, and rub the feet and legs well.

At the same time, take internally the following preparation: Take of Biniodide of Mercury, 3 grains; White or Loaf Sugar, 60 grains; mix and triturate, or rub well in a glass or wedgewood mortar till thoroughly pulverized and mixed; and give of this powder about 1 to 2 grains, or about half as much as will lie on a three cent piece, once every two or four hours, according to the urgency of the symptoms. At first you might give a powder every two hours, till five or six are taken; after which, once in four hours, will be often enough.

At the same time put 20 drops of tincture of Belladonna into half a tumbler of water, mix it well by stirring with a tea-spoon, and give a tea-spoonful of this every two to four hours, or in alternation with the powders. That is, give first a powder, and an hour afterward give a tea-spoonful of the fluid, and so on in regular alternation. These two remedies may be considered a specific in this disease, and will cure nine cases out of every ten, if not ninety-nine in every hundred, if properly given and persevered in. They can be had at any good drug-store. You should have the druggist or a physician prepare the powder for you; the tincture you can procure in a little vial, say from a quarter to half an ounce, and you can mix it with the water yourself. As the patient begins to improve, you need not give the medicine so often, but gradually increase the interval between each dose, to two, three, or four hours. The dose or quantity may be the same for children as adults.

If the throat becomes very sore, and the pellicle or white coating appears, use the following gargle: Take Bi-chromate of Potash, 10 grains, soft or Rain-water, 4 ounces, or ½ tumblerful, and mix. If the patient is old enough, let him gargle out the mouth and throat with a little of this, about once every four hours; if too young, then let the mouth be swabbed out with the same.

In case you should not be able to procure these articles, especially the powders and the Tincture of Belladonna, then perhaps the next best treatment would be to give, internally, a little Bi-carbonate of Soda, or common Soda (to be had at any drug-store or physician's office), say from 1 to 10 grains, according to the age of the person, dissolved in a tea-spoonful or two of water, and repeated every half hour, or every hour or two; at the same time gargle or wash out the throat and mouth frequently with a strong Salt-water, warm, in case you cannot procure the Bi-chromate of Potash.

A gargle composed of Vinegar, Honey, Red Pepper, and warm Water, is also highly recommended by some persons. For children, the Pepper should be left out. As an external application, it is said that nothing is equal to Ashes and Salt, to be applied as hot as can be borne, in a flannel or thin muslin bag. Some consider this alone,

with the last mentioned gargle, sufficient to cure any case, if properly and perseveringly used. A little Goose Grease or Lard Oil is also recommended by some as an external application, especially if there is much swelling and soreness about the neck. It might be applied at the same time with the hot Ashes and Salt.

PLEURISY.

PLEURISY is an inflammation of the *pleura*, or membrane which lines the internal cavity of the chest. It is most apt to occur in persons of rheumatic and gouty constitution. It may exist as an independent affection, but more frequently is connected by sympathetic or organic influence with some other affection of the lung.

CAUSES.— Sudden cold coming in contact with the skin or surface of the body; drinking cold water when the body is heated by exercise, and in a profuse perspiration; sleeping out of doors, or in damp places; a check of perspiration from exposure to a draft of cold air, or any thing that suddenly obstructs perspiration, may produce Pleurisy. It may also be caused by violent exercise, or by heavy lifting. The sudden striking in of Small-pox, Measles, or any eruption, may also produce it.

SYMPTOMS.— Pleurisy, like most other forms of Inflammation and Fever, usually commences with a chill, or chilly sensations, followed by heat, thirst, and other febrile symptoms. After a few hours the patient is seized with a sharp, acute pain in one side, usually in the region of the short ribs, which gradually extends toward the shoulder-blade, and toward the fore part of the breast; the pain increases, and sometimes becomes very violent. It may or may not be attended with coughing and expectoration. The matter that is coughed up is generally more or less mixed with blood. The pulse is strong and vibrating, feeling like a tense cord.

Treatment.— In the first place give tea-spoonful doses of Tincture Lobelia and No. 6, equal parts, repeated every ten minutes until four or five doses are taken. Ten to fifteen drops of Laudanum may be added to each of the first three doses. If you have not the No. 6, Tincture of Cayenne may be used in its stead.

The patient should bathe his feet in Warm Water, and drink Warm Tea — the best is made of the Pleurisy Root, Boneset, and Blood Root, equal parts. This will prepare the system for an emetic, which must be given by all means — no matter what the patient says, or how much he may object, *give an emetic*. This is the "sheet-anchor" in this disease. Let it be composed of Lobelia and Ipecac, given along with the above-named Tea. If the case is bad, make use

of the Vapor Bath, or steaming over Bitter Herbs, before taking the emetic. After this, place Hot Bricks, Stones, or Hot Corn, about the patient in bed, and apply a Mustard Plaster over the seat of the inflammation. Continue the above-named Tea, or something of a similar nature, occasionally giving a dose of the Tincture, and keep the patient sweating, if possible, twelve hours, and then give a cathartic.

Equal parts of Tinctures Lobelia, Blood Root, Macrotys, and Cayenne, to be given in tea-spoonful doses, every hour or two, is also an excellent preparation. If necessary, repeat the emetic. Pursue an efficient course and you can not fail. If the action of the heart is very great, and the pulse too frequent, give also Tincture Digitalis, ten to fifteen drops, three times a day. Do not bleed, as it is almost certain to do injury.

CHRONIC FORM.

Pleurisy not unfrequently becomes chronic, in which case the pain in the side or chest is not severe, but is a sort of soreness, with oppression and vague uneasiness, together with short and dry cough, and difficulty in taking a full breath. The pulse is too frequent, and there may be night sweats, with more or less enlargement of the chest.

The Treatment for Chronic Pleurisy should be of a milder character. A mild emetic given about once a week. It should be given slowly, in broken doses, and occupy fully an hour. Bathing the lower extremities in Lye, or Salt Water, daily, with rubbing, should be observed.

But one of the best remedies known is what is termed an *Irritating Plaster*, to be applied and constantly worn, for some weeks, over the seat of the inflammation. This may be made of Burgundy Pitch, Beeswax, and a little Rosin, all melted together, and while warm, stir in a little finely-powdered Blood Root, Mayapple Root, and Poke Root. Make it of a consistence that it will stick to the skin; spread it thin on a bit of muslin, as large as the two hands, apply it a little warm, let it remain for a week, then renew until it produces pustules and more or less of a running sore. Continue it for weeks, if necessary. There are several very excellent *Porous Plasters* in market, which are as good as anything you can use; Holman's is the best, probably, and is sold at 25 cents, as are several others.

Mild Hydragogue Cathartics are to be used; also Diuretics, such as the Mandrake or Podophyllin, and Cream of Tartar, with a portion of Niter or Salpeter. The *Iodide of Potassa* is a great remedy in this affection. Dissolve 1 dram in 4 ounces of water, and take a tea-spoonful once a day. For the Cough, take Tinctures Macrotys and Blood Root, and Vinegar of Squills, of each, 1 ounce; Extract Licorice, 1 ounce; dissolve in 3 ounces hot Water; mix the whole, and take in table-spoonful doses, every one, two, or three hours, as the Cough may require.

BRONCHITIS—ACUTE FORM.

THIS is an inflammation of the lining membrane of the bronchial tubes, or air passages. Persons who are in the habit of speaking much, or singing, are very liable to it, especially in cold weather, or changeable climates. It may be either acute or chronic. The *causes* are the same as those of Inflammation of the Lungs, and, where there is a predisposition to it, long and loud speaking or singing may bring it on.

SYMPTOMS.—Acute Bronchitis usually commences with a cold, slight cough, chilliness, oppression and tightness of the chest, and some fever. As the disease advances, these symptoms increase, the breathing becomes more difficult, with a sort of wheezing, and sometimes hoarseness. At first the cough is dry, but after awhile there is a copious secretion of tough, white mucus thrown up, which sometimes changes to a yellowish or greenish color. There is usually severe pain in the head; the tongue is covered with a white, mucous coat; frequent pulse, and dry skin.

Treatment. — Our principal reliance in the acute or inflammatory form of this disease should be on emetics; and probably the best that can be used here is equal parts of the Tinctures of Lobelia and Blood Root, given in table-spoonful doses every five minutes, with some Pennyroyal or Boneset Tea, until thorough vomiting has taken place. In bad cases, apply bitter herb fomentations to the breast and throat, and let the patient inhale the vapor into the lungs. Give as an expectorant and diaphoretic, a tea of Pennyroyal, Boneset, and Sanguinaria (Blood Root); keep the bowels open with a mild purge occasionally.

Chronic Bronchitis is, in the ordinary way, a sequence and continuance of the acute, but may be developed without the indications of a very acute attack. Those who have once had it are likely to have it return. This tendency is more marked with increasing years, and in the aged it often becomes fatal. It is attended with a troublesome cough, expectoration of the whitish, frothy matter, loss of appetite, a quick pulse, high-colored and scanty urine, and other symptoms similar to the acute form.

Treatment. — A mild emetic, same as for the acute form, given in broken doses. Repeat once a week.

Mild cathartics, sufficient to keep the bowels in a lax condition, are also proper — such as pills made of the Extract of White-Walnut Bark, with a little powdered Mandrake and Blood Root; or any good vegetable purgative.

Let the patient bathe his feet frequently in warm water, at least every night, and use the following preparation: Take the Acetic Tincture of Sanguinaria (Blood Root tinctured in Vinegar), Tincture of the Macrotys (Black Cohosh), Tincture of Balsam Tolu, and Wine

of Ipecac, of each 1 ounce; Sweet Spirits of Niter, 2 ounces; mix, and take from one to two tea-spoonfuls three or four times a day. Also, inhale the warm vapor of herbs, as Hoarhound, Tansy, Catnip, Dog Fennel, and the like, and, to effect a radical cure, apply an Irritating Plaster to the upper part of the breast, and wear it, occasionally renewing it, for several weeks.

INFLAMMATION OF THE LUNGS.

WHEN the substance of the Lungs, or the mucous membrane which lines the air-cells and passages of the Lungs, is the seat of the inflammation, it is called *Pneumonia;* when the membrane which covers or envelops the Lungs (the pleura pulmonalis) is inflamed, it is called *Peripneumonia.* The treatment is about the same in both cases, however, and does not require separate descriptions. Inflammation of the Lungs is liable to attack all classes. At some seasons, and in certain sections of country, it is very prevalent. When it occurs during the winter and early spring, it is by some called *Winter Fever*, and often proves very dangerous.

CAUSES. — The most common cause of this disease, probably, is from taking cold, which settles upon the Lungs. This causes a *check of perspiration*, which closes the capillary vessels of the skin, and determines the blood upon the Lungs. It occurs most frequently in the winter season and early spring; and persons of robust constitutions and large Lungs are most subject to it. It may occur, however, and sometimes does, at all seasons of the year. Persons who have had a severe attack of the disease, become thereby more liable to subsequent attacks.

SYMPTOMS. — Inflammation of the Lungs commences with a dull pain in the chest, or in one side of it, if but one lung is affected, with difficulty of breathing — especially if the patient lies upon the side affected — with cough, dryness and heat of the skin, and more or less thirst. At first the pulse is full, hard, strong, and very frequent; but as the disease advances, it sometimes grows weak and soft, but continues very frequent. The cough is usually moist, and the matter spit up is a white, tough, and frothy substance, sometimes streaked with blood. The tongue is coated at first with a white fur.

As the disease proceeds, the face is apt to become of a dark purple; the vessels of the neck become turgid and distended with blood; the breathing quick, short, and very difficult, threatening suffocation. When death takes place, it is generally from an effusion of blood into the cellular substance of the Lungs, thus preventing circulation

through those organs, and also occasioning suffocation. It may also prove fatal by terminating in suppuration and gangrene. When suppuration has taken place, it may be known by frequent slight shiverings, an abatement or absence of pain, and a sense of fullness in the part. The patient can also lie on the affected side without causing much inconvenience. When the disease proves fatal, it is generally between the third and seventh days.

Favorable Symptoms. — If, in the course of the disease, a copious flow of urine should set in, or a diarrhea, or profuse sweat over the whole body, or even a hemorrhage from the nose, they are to be regarded as highly favorable, showing that the disease has most likely passed its *crisis*. Also a copious expectoration of thick, whitish, or yellowish matter from the Lungs, is to be regarded as highly favorable.

Treatment. — The treatment in all cases of Inflammation of the Lungs should consist mainly in Emetics, Diaphoretics (or Sweating Medicines), Expectorants, with external means for aiding perspiration and the equal distribution of the blood; and in case the tongue becomes coated, dark, brown, or yellow, Cathartics that act on the Liver. I lay down the following as a proper course to be pursued in a bad case — which can be varied according to circumstances.

First, you may commence by letting the patient sit for half an hour with his feet and legs in warm water, and drink some warm sweating teas, as the Composition Powder, with a little powdered Blood Root added, or Pennyroyal and Sage. In the mean time, boil, in a large pot or kettle, a quantity of bitter herbs, as Hoarhound, Tansy, Hops, Boneset, Smartweed, Horsemint, and Peach Leaves, a handful of each, or of as many as you can get. Then take the vessel from the fire, strip the patient, and seat him over it, with a blanket thrown round his shoulders, so that it can fall to the floor around him and outside of the chair, so as to confine the steam arising from the herbs and hot water in the vessel, and at the same time allow it to come in contact with his body as high as his neck. Continue this for half an hour, occasionally throwing into the vessel a hot brick or stone, to raise the steam; wet the face and head with cold water, if the patient feels faint, and let him continue supping a little of the warm tea.

Next, wipe him off quick and put him in bed, and give immediately a thorough Emetic, composed of equal parts Powdered Lobelia Seed, Blood Root and Ipecac. Take a large table-spoonful of the Compound, and pour on it a pint of hot water, stir, and let stand fifteen minutes, and then commence giving it in ½ a tea-cupful every five to ten minutes, until the patient has vomited thoroughly three or four times. During the intervals between vomiting, let him drink freely of Pennyroyal, Sage, Composition or Boneset Tea.

After the Emetic is through with, place hot Bricks or boiled ear-Corn about the patient in bed, and keep him well covered; continue

the warm Tea occasionally, with a very little of the Emetic infusion added, so as to keep the stomach slightly nauseated, and let him sweat. After continuing this for three hours, the patient having sweat thoroughly, he may be wiped dry, furnished with dry linen, and allowed to rest or sleep.

A large Mustard Draft may then be placed over the chest and region of the lungs, and kept on as long as the patient can bear it—an hour if possible. He should commence taking, in broken doses, some suitable expectorant and diaphoretic. You can probably find nothing better than the same Emetic infusion which I have recommended, given in from a ½ to a table-spoonful, according to the strength of it. Or the same articles may be given in Powder, in doses of 5 to 8 or 10 grains, repeated every hour. Or the Tinctures of Lobelia and Blood Root, and Wine of Ipecac, equal parts, may be given in tea-spoonful doses, once an hour. Or the Expectorant Tincture, made of Pulverized Lobelia Seed and Blood Root, each, 1 ounce; Ipecac, 2 ounces; Cayenne, ½ ounce; Whisky or Diluted Alcohol, 1 quart—digest one or two weeks. Dose: a tea-spoonful every hour.

The Emetics are to be repeated once in twenty-four hours. It may be well to repeat the steaming over bitter herbs as often, or employ the common Vapor or Steam Bath.

At first the tongue will be coated with a white fur; but if it changes to dark brown or yellowish, a Cathartic must be given, such as will act on the Liver and Secretions. The Anti-bilious Physic and Powdered Mandrake will be suitable, or three or four Pills made of Extract Mandrake Root, and Powdered Blood Root and Cayenne. This is one of the best Liver and Anti-bilious Pills in the world, and good wherever an efficient and speedy Cathartic is needed. Give three or four of these Pills, and repeat in six hours, if they do not operate. The Bowels should be kept in a lax state by giving one of these Pills, or a small quantity of the Powder of Mandrake and Blood Root, every night or morning, so as to gently act on the Liver. The Podophyllin may be used instead of the Mandrake.

Continue the Expectorants all the while, night and day, if the case be a severe one. Should the disease assume an intermittent form, like the Ague, or Intermittent Fever, Quinine should be given. You may combine it with the Expectorant, or give it in any other way, so as to give, during one day, about 12 grains, after which omit it for several days.

It may be well, occasionally, to apply a fomentation of herbs over the chest and lungs, as warm as can be borne, such as Hoarhound, Catnip, Tansy, and the like. Repeat also the Mustard Draft once a day. But rely mainly upon Emetics, nauseating Expectorants, and Sweating. The Skunk Cabbage (Root) is also a good Expectorant in this disease, and may be combined with the other articles, in either Powder, Tincture, or Infusion.

Bilious and Typhoid Pneumonia.—Sometimes Inflammation of the Lungs appears as an epidemic, in certain localities, during the winter season, when it becomes very malignant, and is apt to assume a Bilious or Typhoid character. It is sometimes called Winter Fever and the

"Cold Plague." It is very fatal, if not properly treated. In such cases, pursue the same course of treatment as the foregoing, only, if possible, more thoroughly and vigorously. Instead of the skin being hot, in this form of the disease, there is usually a remarkable coldness of the surface and extremities. The feet and legs should be bathed frequently in warm Lye Water. The following Powder should be given, in addition to the other medicines: Take Pulverized Ipecac, 2 drams; Pulverized Gum Camphor, 2 drams; Salt of Hartshorn (Carbonate of Ammonia), 2 drams; Pulverized Opium, ½ dram; triturate, or rub all together well, in a small mortar, and give at a dose about 8 grains every three or four hours. Or the Dover's Powders may be given instead, or the *Diaphoretic Powders*. (See Table of Family Medicines.)

Anti-bilious purgatives will be necessary; and if the disease assumes a typhoid character, Quinine and stimulants must also be given. Emetics, and external application of heat, and expectorants, are indispensable. If the pulse continues too frequent, give also Tincture Digitalis, 10 to 15 drops, three or four times a day.

Peripneumonia.—If the inflammation should only be seated on the external membrane of the Lungs, the *pleura pulmonalis*, the symptoms may vary somewhat from those of inflammation of the substance of the Lungs. The pain will generally be on one side, and will be sharper and more acute, more like Pleurisy. There will not be that difficulty of breathing and sense of suffocation; but breathing will cause more pain in the part.

Treatment.—If the case does not assume a virulent form, an Emetic, a good Sweat, a Mustard Draft over the seat of the disease, and the use of No. 6, and the Tinctures of Lobelia and Macrotys (Rattle Root), equal parts, in tea-spoonful doses, once an hour, will generally be sufficient. Tincture of Cayenne may be used instead of No. 6. Should it, however, be severe, involving more or less the substance of the Lungs, pursue a similar course to that recommended for Inflammation of the Lungs, or treat it the same as a case of Pleurisy.

BLEEDING FROM THE LUNGS.

THIS complaint is usually called Spitting of Blood. It consists in coughing up small quantities of bright red blood, sometimes quite frothy, and is usually preceded and accompanied by heat and pain in the chest, irritation in the windpipe, and more or less saltish taste in the mouth. Hemorrhage from the Lungs may easily be distinguished from that of the Stomach, as in the latter case the blood is vomited up, usually in large quantities, of a much darker color, and more or less mixed with the contents of the Stomach; whereas,

the blood from the Lungs is of a florid color, is thrown up in small quantities, by coughing or hawking, and is more or less mixed with a frothy mucus.

Causes. — Bleeding from the Lungs is, as a matter of course, owing to a weakness of those organs, or to the tender and delicate character of their structure, allowing of easy rupture of the air-cells and small capillaries. It may be brought on by over-exercise and violent exertion, as running, jumping, wrestling, singing loud, or blowing on wind instruments. Also by Plethora, Hectic Fever, Coughs, and Colds upon the Lungs. It may also be induced by the suppression of some accustomed discharge, particularly that of the Menses. It most usually occurs in persons with narrow chests, high shoulders, and who are otherwise delicately formed, and of a sanguine temperament.

Spitting of Blood is not always to be considered a primary disease; nor is it necessarily connected with Consumption. It is often only a symptom of some other disease, as Pleurisy, and Lung Fever. In some fevers it appears as a *crisis*, denoting a favorable termination.

Occasionally, the blood thrown up is of a dark or blackish color; this, however, only shows that it has remained a longer time in some of the air passages, before being thrown up. The complaint is not attended with any danger, where it is not connected with Consumption, or where it leaves no cough or other affection of the Lungs. When it occurs in persons of a weak, lax fiber, and delicate constitution, it is more difficult to cure.

Treatment. — One of the best and most common remedies for Spitting of Blood, is Salt. A tea-spoonful should be taken, dry, and repeated occasionally. This, in most all mild cases, will be found sufficient, as an internal remedy. External measures should be made use of, as bathing the feet in Warm Water frequently, and applying the Sponge Bath to the whole body—warm or cold—with friction, in order to equalize the circulation, and thus prevent too great a determination of blood to the Lungs, which might cause the difficulty to grow worse.

A decoction, or strong tea, made of the leaves of the Bugle Weed, (*Lycopus Virginicus*), is one of the best remedies known for Bleeding of the Lungs. As much as a pint a day should be drank, cold, for several days, to prevent a return of the hemorrhage. It is a very good addition to use a portion of the Beth Root and Juniper Berries, along with the Bugle Weed.

A tincture made of equal parts of the Black Cohosh Root, (Macrotys) and Blood Root (Sanguinaria Canadensis), is also a valuable remedy, especially if there is any liability to Consumption. It may be taken in tea-spoonful doses every three hours during the day, and continued. An occasional purgative will be advisable.

In more severe cases, the patient should be kept quiet, and a pow

der, composed of 1 grain of Cayenne, and ½ grain each of Ipecac and pulverized Opium, given every two or three hours, until relief is obtained. Small quantities of a decoction of Black Cohosh and Beth Root, should also be taken at short intervals.

CONSUMPTION.

IN the short space of a few pages we do not anticipate that justice can be done to a subject of such extent and importance as the one before us. If, by our suggestions, we may be able to point out danger before it is too late; if we shall succeed in warning the unsuspecting, or arousing the careless, something will have been accomplished to ward off the inroads of an enemy more fatal than any among us — more fatal because more common, and hence less feared. In Consumption, as in many other diseases, life can be prolonged, and the disease not unfrequently cured, by averting its causes. When once rooted and settled for any length of time, the sufferings may be alleviated by the watchful care of friends, the efforts of science, and change of climate; but generally, when Consumption is not relieved in its first stages, or, in other words, when it becomes fully and deeply seated in the lungs, as far as my experience has gone, I have found, with some few exceptions, remedies to prove alike fruitless and unavailing.

What a train of melancholy reflections arise in witnessing the slow but certain decay of the young, the bright, and the beautiful, whose charms delight us for a moment, and then fall a prey to that dreadful scourge, Consumption!

This disease depends for its existence upon Art more than Nature — upon the abuses of civilization rather than upon climate. In highly civilized countries, like England, France, and the United States, Consumption is found in the mansions of the wealthy, and the cellars and hovels of the destitute, and in both it is the result of exhaustion. The luxurious are prematurely worn into Consumption, while the destitute are starved with noxious air and frozen into it. Excessive toil is more debilitating than excessive living. As a proof of it, we may instance a fact which we have often noticed, that old people, who have been comparatively free of disease, frequently die of Consumption. The constitution being worn out, or, in other words, the vital powers exhausted, the lungs, being one of the weakest portions of the body, imbibe disease, and death closes the scene.

Very few persons, however, are left to die of old age. Men wear

themselves out very fast in this country. Some do it oy drinking intoxicating liquors, some by smoking or the excessive use of tobacco, some by inordinate mental labor, some by ambition to make money, some by over-feeding, and some by other causes as little suspected.

Women, too, exhaust life by a neglect of nature's laws. Excessive novel reading, sedentary habits, tight dressing, eating confectionery, late hours, exposure in thin dresses and shoes, too early marriages, a neglect of exercise and pure air, and a score of other errors arising from fashion, vanity, or ignorance, all of which destroy annually thousands of females, who, by thus exhausting the vital powers and weakening the lungs, fall an easy prey to Consumption. According to a law of animal life, all morbid action falls upon the weakest part of the system, and breathing noxious vapors, whether in hovels or palaces, will render the lungs weak.

If, then, the digestive powers are disordered by any excess, or weakened by privation, whereby the whole vital energy is impaired, why should we wonder if diseased action fall upon the lungs, already impaired by this general diminution of vital energy, and also by the direct inhalation of noxious vapors, from confined, ill-ventilated rooms, shops, offices, counting-houses, cellars, and all places where there is a deprivation of pure or fresh air.

Hereditary Predisposition.— These are words that can not be misunderstood. They speak the feelings of experience, of unfettered reason and observation, which fully confirm that solemn truth "the sins of the father may be visited upon the children unto the third and fourth generation." The doctrine of the transmission of morbid peculiarities through successive generations, is as old almost as that of Medical Science itself, and hid, we might almost say, in the regions of the past, we find it recognized in the laws regulating the economy of the domestic relations. How such peculiarities are generated and perpetuated, philosophy has failed to teach us. We know that "Great are the mysteries of Providence," and "His ways are past finding out." A long list of the most fearful might easily be given, but we will name only a few: Consumption, Madness, Epilepsy or Fits, Cancer, Scrofula, etc. They are all well authenticated, and worthy the study of those who feel the interest natural to parents in the happy establisment of their children, as also of the practical advisers of those personages whose offspring are destined to fill the highest places among men. Intermarriage of blood relations is a fruitful source of disease. In a town in Maryland, for several generations back, three families, of wealth and respectability, have intermarried, until there can not be found a sound man or woman. One has sore eyes, another scrofula, a third idiotic, a fourth blind, a fifth

deformed, a sixth subject to fits, with not one of the number exempt from physical or mental defect of some kind. Yet these families continue to intermarry with each other, with these living monuments constantly before them!

A careful examination of one hundred towns in Massacnusetts, brought to light five hundred and seventy-five cases of idiocy. Of these, four hundred and twenty were idiots from birth, and of this number they obtained certain and undoubted information respecting the parents of three hundred and fifty-nine. In all but four of these examined cases, it was found that one parent or the other, or both, had, in some way, departed from the laws of life and health, being either scrofulous, predisposed to brain affections, intemperate, grossly sensual, or unnaturally intermarried with blood relations. The lessons taught by such disclosures should prove a warning.

The report of Dr. Brigham of the New York Lunatic Asylum, states, as the result of careful investigation, that insanity is more likely to be transmitted by the mother than by the father, and that mothers are more likely to transmit it to daughters than to sons, while fathers most frequently transmit it to sons. If we will, however, reflect, and examine into the subject minutely, instances are innumerable; but we purposely close the book of record, as regards hereditary peculiarities.

Upon a peculiar physical conformation, which we will notice briefly, some reliance has been placed as indicating a predisposition to Consumption. The fair, delicate whiteness of some parts of the face, contrasting strongly with the soft, vivid blush of the cheek — the blue, bright eye — fair, light hair — the projecting, enlarged upper lip — the conformation of the body generally, with the flaccid muscles, have long been associated with the predisposition to Consumption. There are, however, exceptions to this rule; for, at times, individuals of an entirely opposite general appearance are attacked and destroyed by this universal plague. Let me, then, again urge you to take *exercise* and *fresh air*. Fresh air, under any circumstances, is of vast importance. It gives energy to the mind and body. How many locked up and confined in cities pant for the fragrance of the invigorating breeze! What has not fresh air, or, as it is called, when quitting the crowded city, change of air, effected? How many has it not snatched from the jaws of death? How many has it not saved from the tedious pilgrimage of sickness, and spared from desolate loneliness? The apparently consumptive, the melancholy hypochondriac, and the waning and harassed dyspeptic, it has restored to former liveliness and joy. The first gush of air revives the expiring breath. Bedridden invalids have been known to rise and walk the day following

a removal into the country. Apart from local peculiarities and advantages, fresh air, in every instance, is beneficial, as the daily experience of all can substantiate.

The present facilities for obtaining fresh air far exceed those of former times, and any one who does not avail himself of them, must be entirely regardless of his own health, or that of his family. The railroads, omnibuses, steamboats, afford cheap facilities for exercise, and of obtaining fresh air, the enjoyment of country recreation and change of scene, thereby relieving the mind, which, I have before told you, have a most powerful influence upon health. Therefore, if you wish to avoid Doctors, Physic, Consumption, Dyspepsia, Nervous Diseases, and a thousand other ills that flesh is heir to, live temperately, take regular exercise and pure air; let your dress be suitable to the changes of the weather, and avoid taking *physic* as much as possible, for no sensible doctor takes much medicine himself, but it is his interest to prescribe it. The temperate and regular rarely suffer from this disease, save those on whom it is more or less conferred by their ancestors. The intemperate and irregular suffer from this and a variety of other diseases, which I have before mentioned, in every State of the Union, for we are more inclined to seek the causes of this disease in *habits* than in *climate*. Therefore, the best preventives of Consumption are pure air, and a moderation in every thing, physical or intellectual. The Quakers, I have observed, are seldom victims of Consumption, and I ascribe this general exemption to general freedom from excesses of body or mind.

Before I close this important subject, as a preventive to those predisposed to Consumption, or persons of delicate health, let me advise you to wear thick-soled shoes in bad weather, for the feet are electric points of the system. By all means avoid gum-elastic shoes, because they keep the feet too warm, confining the perspiration, and derange the proper action of the skin, producing debility and disease, by preventing the sweat from escaping from the pores. In dress and diet, we can only say that whatever makes you *feel best*, of which experience must be the test, is the best preventive of Consumption.

Coughing, in Consumption, is an annoying attendant on this distressing disease, and we are induced to present the circumstances in relation to the case of a gentleman who, after long confinement, escaped from the fangs of this complaint.

"You speak of coughing continually. Let me suggest the query, whether this is not unnecessary and injurious. I have long been satisfied, from experience and observation, that much of the coughing which precedes and attends Consumption is *voluntary*. Several years ago, I boarded with a man who was in the incipient stages of Con-

sumption. I slept in a chamber over his bed-room, and was obliged to hear him cough continually and distressingly. I endured the annoyance, night after night, till it led me to reflect whether something could not be done to stop it. I watched the sound which the man made, and observed that he evidently made a voluntary effort to cough. After this I made experiments on myself, and found that I could prevent myself from coughing, sneezing, gaping, etc., in case of the strongest propensity to these acts, by a strenuous effort of the will. Then I reflected that coughing must be very irritating and injurious to the delicate organs that are concerned in it, especially when they are in a diseased state. What can be worse for ulcerated bronchia, or lungs, than the violent wrenchings of a cough? It must be worse than speaking. A sore on any part of the body, if it is constantly kept open by violent usage, or made raw again by a contusion, just when it is healing, (and of course begins to itch,) will grow worse. Certainly, then, a sore on the lungs may be expected to terminate fatally, if it is constantly irritated and never suffered to heal; and this, it seems to me, is just what coughing does for it. On the strength of such considerations as these, I asked the man if he could not stop coughing. He answered no. I told him what I thought about it, as above. He agreed to make a trial; and on doing so, he found to his surprise that he could suppress his cough almost entirely. The power of his will over it increased as he exercised it, and in a few days he was mostly rid of the disposition to cough. His health, at the same time, evidently improved. When I last saw him, he was in strong hopes of getting well."

This occurred eighteen years ago, and the man is now an active business man, averring that he had not been sick since.

It has been the fashion to doubt whether tubercles of the lungs, or, in plainer language, when ulcers or sores are formed in the lungs, whether they are ever cured. But these cases are now better understood and far more hopeful. Both the experience and the testimony of many trustworthy witnesses, as well as my own observation, have assured me of the frequent curability of this disease.

We close this subject by showing, in a few words, the three principal predisposing causes of Consumption — a lymphatic temperament, hereditary formation, and bad air; so that whatever will tend to aggravate, or invite this disease, will hasten it on those predisposed to it, from parents or other causes.

The lungs, when moderately distended, contain, at a medium, about twelve pints of air. As one pint is inhaled at an ordinary inspiration, and somewhat less than the same volume is expelled at an ordinary expiration, there remains present in the lungs, at a mini

mum, eleven pints of air. There is one act of respiration to four pulsations of the heart. In good health, there flows to the human lungs every minute nearly eighteen pints of air, (besides the twelve pints constantly in the air vesicles), so that in the space of twenty-four hours, upward of fifty-seven hogsheads of air pass through the lungs. Air once breathed is, by passing through the lungs, deprived of the healthful part—the oxygen—and becomes little less than unmixed poison—the nitrogen only remaining.

Symptoms.—Consumption often begins with a dry, hoarse cough, which gradually increases, and continues for months, with more than a usual degree of heat, pain and oppression of the chest, after moving, or any quick motion of the body. The cough increases or continues, attended with the raisings of purulent matter, sometimes streaked with blood. The flesh of the patient next begins to waste away, and he finally becomes greatly emaciated, dwindling away, often, to a mere skeleton.

Hectic Fever.—Another very common symptom of Consumption, or rather attendant upon the disease, is Hectic Fever; sometimes but slight at first, but as the disease advances, it often becomes severe and exhausting. This fever is not constant through the whole day or night, but generally comes on in the morning and abates about noon; a little chilly at first, then hot, thirsty and restless, followed by perspiration or sweat. It returns again in the evening or at night, and goes off with what are known as Night Sweats. Upon each cheek of the Consumptive person there will be, during the fever, a bright red spot, nearly circular; sometimes only on one cheek. Hectic Fever is merely symptomatic, that is, it is but a symptom of some other disease, generally that of Consumption, but may also attend some other wasting disease; therefore, we can not hope to cure it without first curing the primary disease of the Lungs. Tonics should be given along with the Cough Medicine, and proper attention paid to the skin; bathing the body with a decoction of Oak Bark and Vinegar will be good. Internally, the patient should take two or three times a day little Water made sour with Nitric Acid. This will be good for both the Night Sweats and the Fever.

In all diseases of the Lungs, the instrument called a *Stethoscope* should be used. By the use of this instrument, which conveys the sound produced in breathing to the ear, you can most certainly tell the difference between a healthy person and one whose lungs are diseased. For when a tubercle exists in the lungs, and has discharged its contents, the air, in passing in and out of the cavity which remains, produces a peculiar sound, which the French call *rale*, or, in plain English, a deep, hollow kind of rattle which you

can easily distinguish by placing the ear upon the chest, but more distinctly by the Stethoscope. Whenever you hear this squeaking sound or rattle, it has been found, after death, that an ulceration had existed, and that the sound was produced by the passage of the breath in and out of the cavity which was left after the matter of the ulcer or tubercle had been expectorated, or thrown up. Then by using this instrument, the case may be decided with a great degree of certainty. Many persons who, for a long time, have been greatly distressed in mind from believing they had Consumption, have been relieved from all serious apprehensions or fear by the intelligence conveyed by the Stethoscope. Therefore where much anxiety exists as to the nature of the disease, or its actual progress, the person should submit to an examination, and this new and valuable simple instrument will at once decide the nature of the case.

Treatment.—Above all things, avoid active medicines, or the too frequent use of them. Remember that the best Tonic or Strengthening Medicine, is proper diet, frequent exercise in the open air, change of climate, or a sea voyage. Do not put off these things until the system is worn out, and wearied down by exhaustion or weakness. The thorough use of these three remedies is to be attended to in the first stages of this disease, and is not to be put off until the physician finds that there is no hope, when he recommends, by way of getting rid of the responsibility of the case, a change of climate or a sea voyage. A Consumptive family should move from the locality to which they have been accustomed. Louis mentions the case of a family who lost sixteen children from this disease, but a seventeenth, sent from his native country at an early age, escaped. A child, either of whose parents may be Consumptive, should, from birth, be nursed by a healthy woman, in a pure air—a dry and elevated situation, if possible. Care should be taken as to its diet, proper clothing, exercise, and the skin carefully attended to from the first, by cold sponging and friction, so as to gradually accustom the system to withstand and be fortified against the various changes of atmosphere.

The *Boston Medical and Surgical Journal* makes the following remark on Dr. Stone's new remedy for Consumption:

"A gentleman of the neighboring city of Charlestown, whose son was considered in a hopeless state from the diseased condition of the Respiratory Apparatus, was induced to administer Dr. Stone's medicine, the Phosphate of Lime. That procured at the shops appeared to him to be imperfectly prepared, being coarse and otherwise objectionable. A purer article was prepared especially for the occasion, reduced to an impalpable powder, and 10 grains were administered three times a day, followed by a swallow of Cod-liver Oil. No material change was discoverable in the patient for two weeks. Suddenly, as it were, a fixed pain of long standing in the chest then abated, the sleep became refreshing, the appetite improved,

strength returned, and from being moved about the apartment reclining on an invalid chair, he is now daily riding, on an average, ten miles on horseback, facing the wind and breathing the cold air with impunity. This is a synopsis of a case related by a grateful parent, who would be glad to have others, under similar circumstances, make an effort with the Phosphate combined with the Cod-liver Oil."

Much relief is often experienced from Inhalation, or, in plain language, breathing various articles in steam. I have no doubt that a certain remedy will at last be discovered, in the form of a gas or vapor, breathed into the lungs, operating locally or outwardly upon the ulceration or sores. The tubes, or inhaling vessels, which are usually very simple, may be purchased at any of the drug stores in any of our cities. The patient breathes through the tube, thereby fully expanding the lungs at each inspiration. It is to be used two or three times a day, from twenty to thirty minutes at a time. The articles chiefly used by inhalation are vapor or steam from Tar, Resin, or simple hot Water, in which many simple herbs, mixed, will be found beneficial, where the breathing is difficult, with difficulty of expectoration; or in Cough the vapor of boiling water, into which put a few drops of Sulphuric Ether, or ten or a dozen drops of Laudanum, will frequently afford relief.

Anxious to afford every new remedy that may tend to relieve this terrible malady, we have taken this from the *London Medical Journal*, indulging the hope that it may be successful, as it has been in many cases in Europe:

"An officer in the British service, resident in the East Indies, had been stricken with the fatal disease, and was reduced by it to nearly a skeleton; his friends looked upon him as a doomed man, and he himself had given up all hopes of a long continuance of life. One morning, while crawling about his grounds, he accidentally went into a shed where a man had been bottling some Wine. At the moment of his entrance, some Resin was melted to seal the corks. It could not be otherwise than that those within the room should inhale the smoke arising from the Resin. To the surprise of the afflicted one, his respirations becoming free and unobstructed, it instantly occurred to him that the relief he experienced was produced by having inhaled the Resinous smoke. He remained better during the day, and without consulting his doctor, repeated the experiment in his sleeping-room. That night he slept soundly — a blessing he had not known for years. Twice a day for a week did he continue his experiments, and with increased success. He then mentioned the affair to his medical adviser, who was equally surprised with himself at the improvement of the patient's health, and advised him to continue the inhalations night and morning. In the space of three months his cough subsided, and his appetite returned. In six months his health was so improved that he contemplated returning to his native country; he delayed, however, doing so until a year had expired. Still persisting in his newly-found remedy, his health was completely restored, and he was once more a sound man."

The *London Medical Gazette* contains an article from the pens of Dr. Hastings and Mr. Robert Stokes, surgeon, descriptive of a remarkable operation for the cure of Consumption, by the perforation of the cavity of the Lungs through the walls of the chest. It consists in making an opening into the ribs between the cavity which forms in the Lungs during the latter stages of Consumption. The immediate effect of the operation, (which requires only a few seconds for its performance, and which causes but slight pain,) in the case in question, was the diminution of the frequency of the patient's pulse, which fell in twenty-four hours from 120 to 68 ; freedom of respiration, which had been a very distressing symptom ; loss of cough and expectoration, both of which had been very severe. This operation, which had established the possibility of curing this hitherto fatal disease, appears to have been completely successful. The report of the condition of the patient, a month after its performance, was, that he was rapidly regaining his flesh and strength, whilst his respiration had become natural, and his pulse had fallen to 80, and his cough and expectoration had wholly ceased.

Cod-liver Oil. — This species of oil is now considered a very valuable remedy. There has been so great a call for it, that the oil of every fish caught has been sold for it. The principal diseases for which this is prescribed and taken are Consumption and Scrofula. We have no doubt that in many cases where there are Consumptive symptoms, relief has been obtained by the use of this medicine. Possibly a free use of any other fish oil might have produced the same effect. The accounts that we have read in narratives of voyages among the Esquimaux Indians, who live on seal and blubber, and the fact that the Indians of the Penobscot and Quoddy tribes on our coast are more healthy and fat during the fishing season, when Porpoise Oil is plenty, tend to corroborate this opinion.

We have seen some accounts of the use of other kinds of fish oil, instead of the Cod-Liver, when that particular oil could not be conveniently obtained, which stated that equally as good effects followed its use. Some contend that in the Cod-Liver Oil may be found Iodine and Bromine, two very powerful remedial agents. It may be so, but if this be the case, the benefit derived from them must be attributed to homœopathic doses, for there is not generally enough of them to act otherwise. One mode of the action of this and other oils is undoubtedly by nourishing the patient. They contain large quantities of Carbon, which become transformed or assimilated in the system of the patient as fat, and thereby improve his appearance. We would not deter any persons from making free use of Cod-Liver Oil, if they wished, but at the same time would advise them not to despair, if this species of oil can not be obtained. Try Porpoise Oil, or any fish oil — it will nourish, if it does not cure.

The taste of Cod-liver Oil is completely disguised by masticating a morsel of dried Orange-peel before and after swallowing the dose, or by the use of a lump of Brown Sugar.

Cough Syrup. — The following valuable remedy I have used for many years in my practice with great benefit: Hoarhound, 1 ounce;

Elecampane, 1 ounce; Comfrey, 1 ounce; Spikenard, 1 ounce; Wild Cherry Bark, 1 ounce. Boil 1 gallon of soft water down to 1 quart, so as to get the strength well out of them; then pour it off, strain, and add 1 pound of Honey, so as to form a Syrup, and give a table-spoonful three times a day, or as often as the Cough may prove troublesome. I have used it in many cases, apparently incurable, with success, and you may rely on it as being truly valuable in obstinate cases.

Cough Mixture. — This medicine is widely known and used, and must possess merit, judging from the success which attends it. Mix Spikenard, 1 ounce; Saltpeter, 2 tea-spoonfuls; best Whisky, 1 quart. Dose: ½ wine-glassful, more or less, as necessary, three times a day.

A valuable remedy, given to me by the Rev. M. Thornton, near Louisville, is Wahoo Root, called by some Indian Arrow. A syrup made of this Root, by boiling it well, and adding to it Loaf Sugar sufficient to make a syrup, has been used with great benefit. As a tea it produces slight sickness of the stomach, and determines to the surface, or, in other words, sweats gently. It bears a red blossom, and grows plentifully throughout the West and South.

The following recipe was given to me by Mrs. Neal, wife of Solomon Neal, a highly respected lady and gentleman, members of the Methodist church of Louisville, Ky., and conspicuous for their charities and good works: Wahoo Root, 1 ounce; Sarsaparilla Root, 1 ounce; Wild Cherry Bark, 1 ounce. Boil each, separately, in 1 gallon of soft water down to 1 pint, so as to leave of each 1 pint after it is strained through a coarse towel: then mix the 3 pints altogether and add to it 3 pints of Molasses; boil to a thick Syrup, and, after boiling sufficiently, add a tea-spoonful of grated Indian Turnip and a lump of Alum, about the size of a small nut-meg. Dose: a table-spoonful three or four times a day, or when the Cough is troublesome

Where there is pain and soreness in the chest, a warming liniment is useful, and may be applied frequently. A Porous or Burgundy Pitch plaster is often good to keep the part warm, and in this way exerts a beneficial effect upon the lungs.

Remedies for the relief of cough in consumption should be used cautiously, as they often destroy the appetite, and in this way do more harm than good. The cough is only a symptom of irritation of the lung from tubercular deposit or inflammation, and taking preparations of opium and emetic and nauseating medicines derange the stomach and destroy the nutrition, which is the main dependence in trying to heal and radically cure the diseased lungs. If the cough is very annoying, some simple medicine may be given, such as glycerine and paregoric—two parts of glycerine to one of paregoric, and a tea-spoonful at a dose; or a few drops of a mixture known as *Turlington's Balsam*, found in all drug stores, may be given on a little sugar; especially is this useful at night, when the hacking cough keeps the patient awake.

The inhalation of different vapors is often useful in allaying cough

and healing the lungs. The steam from hot water with hops or pine boughs in it is good. The vapor from iodine, alcohol, ether, etc., have been used, and with benefit in some cases.

The most important point in the treatment of lung diseases is to build up the system with good nourishment, fresh air and proper exercise. Among the best forms of nourishment I mention milk, cream, fresh beef and mutton, also I include with these Cod-Liver oil and extract of malt. These latter two may be given in the form of an emulsion which covers up the disagreeable taste of the oil, and at the same time renders it more easy of digestion. Where the oil cannot be taken, the extract of malt alone may be given with good results.

Much has been written recently about consumption being caused by a living germ or Bacteria, as it is called; and that certain drugs have the power of destroying these minute living bodies. This is one of the fine theories that is hard to demonstrate and render practical, and it is my opinion that it will have its run and die out as many other theories have heretofore.

I cannot leave this subject without referring to the agent which has been so extensively advertised over the country under the name of Oxygen treatment, Oxygenized air and Compound Oxygen.

That oxygen is beneficial in consumption and other exhausting diseases, there can be no question; but I seriously doubt the efficacy of the bottle of water which is sent out under the name of a "home treatment." Oxygen is a gas, and it is difficult to force any considerable quantity of it into a quart bottle of water. The proper way to use it is to collect it in a large reservoir or tank, and let the sick person inhale it through a tube directly from the tank. If you have a chance to take it in this way, it will do much good; and I recommend those who are much debilitated and pale to make use of it in case they can have access to the genuine article.

Consumptives should, if possible, remove to a mild climate, and spend as much time as possible in the open air; even if living in a rigorous northern latitude, it is better to live in the open air, and properly protect the body from the sudden changes of weather.

As to exercise, it is better for consumptives in the later stages of the disease to rely mostly on passive exercise—that is, the exercise one gets by riding on horse-back, or by the aid of another person in moving our limbs, rubbing and kneading the muscles generally. This is sometimes called "Swedish movement cure," and much the same system of exercise is known as "Massage." These forms of exercise are very beneficial to consumptives and all kinds of weakly people, and should be resorted to where active exercise is attended by great fatigue, nervousness, or wakefulness.

In the Essex and Colchester Hospitals, in England, they report that in upward of two hundred and fifty cases of Consumption, the Oil of Almonds, in the treatment of both Consumption and Scrofula, was equally beneficial. Remember that Consumption and Scrofula are nearly allied, and the means used for their cure are nearly the same. This is the recipe used in the hospital: Oil of Sweet Almonds (new), 2 ounces; Syrup of Maiden-hair, 1 ounce; Marshmallows, 1 ounce; Saffron, 10 grains; and as much White Sugar as will make it into a good syrup, as thick as honey. A tea-spoonful to be taken three or four times a day.

The question has been often asked, Can Consumption be communicated from one person to another? It can not, except when there is close communication of those predisposed to this disease, by constantly breathing, or leaning too much over the person affected. By all means avoid sleeping, if possible, in the same bed.

The belief that Consumption is seldom cured, I know to be superstitious and untrue. There is no more difficulty in the healing of a *tubercle* in the lungs, than of the healing of a scrofulous tubercle or sore in any other part of the body; provided the lungs and general health are in the right condition. And I have seen hundreds who appeared as mere skeletons, for whom I had not the greatest hope of a cure, entirely restored to health, by using the Syrups or Cough Mixtures before mentioned, avoiding all active or strong medicines, using proper food, and frequent exercise in the open air. For I assure you, from a long experience in my profession, that thousands have died from a want of invigorating exercise and pure air; the nervous system and the mind being worn out by incessant calls upon the senses, and a change of climate having been put off from day to day.

I have heard many who, in the last expiring breath, have said: "Oh! that I had but attended to these instructions earlier." Then let me advise you visit in due time the shores of the "deep, deep sea," hear the music of its restless waves, breathe pure air from its healthful bosom, and be, we trust, through the blessing of God, restored to health.

I can not urge too strongly the necessity of pure air, and a change of climate in the early stages of this disease. The poison of bad air, and its injurious effects upon the system, destroy thousands. The health of our women and the constitutions of their children are injured by it. A healthy person takes in about a pint of air at a breath; he breathes a thousand times in an hour, and requires about fifty-seven hogsheads of air in twenty-four hours. Air once breathed is, by passing through the lungs, deprived of the healthful part—the oxygen—and becomes little less than unmixed poison—the nitrogen only remaining; therefore, get pure air to breathe.

DISEASE OF THE HEART.

DISEASE OF THE HEART, medically called *Angina Pectoris*, is a painful disease, and one which not unfrequently produces an agonizing affection of the Heart. It is commonly felt as a pain in the breast, without referring it to any particular part. It is known to be an affection of the Heart, by dissection after death. Its attacks are usually very sudden. An acute pain is felt at the lower end of the breast-bone, extending a little to the left side, over the position of the Heart in the chest; a loss of breath, or a sense of suffocation, and great anxiety, follow the pain; the countenance becomes deadly pale; the pulse sinks; and the surface of the body is covered with a cold sweat. Such is the sinking of the vital powers, that life itself seems about to be suspended. In the commencement of the disease, the fits of distress are greatly relieved by a short repose, or by remaining for a few moments perfectly still; but sometimes they grow more severe, and require for their relief the most powerful anodynes. The affection is, perhaps, discovered by ascending a steep place; by a sudden emotion of the mind, or by suddenly running up stairs; sudden bursts of anger, or excitement, will also bring it on. Where this complaint becomes violent, the pain extends from the Heart down to the middle of the arm, and often on the same side, even to the extremities of the fingers. Sometimes both arms are affected. Along with the pain, which is said to be agonizing beyond description, there is, as I have before told you, a sensation as of instant impending death. The paroxysm ceases as suddenly as it comes on. These spells of anxiety and distress will often last for half an hour at a time, accompanied with a violent palpitation of the Heart. The paroxysms appear to be produced frequently by eating a full meal at night, which often brings on an attack of this disease after the first sleep. A light vegetable diet, and abstinence from heavy suppers, and a regular mode of life, are therefore of great importance to those afflicted with this complaint; carefulness will tend to prevent a recurrence of the affection.

Treatment.—In Disease of the Heart, *instant* stimulation is demanded. The first convenient stimulant at hand must be used, till other remedies can be procured. A glass of Spirits and Water, as hot and strong as it can be swallowed, may be given. A mixture of equal parts of Laudanum and Ether should instantly be made, and a tea-spoonful of it given at a time, in a little Cold Water. An issue made upon each thigh has frequently cured this complaint. Apply to the Breast a strong Mustard Poultice, and one between the Shoul-

ders, and also Hot Applications to the Feet. If the first dose of Ether and Laudanum does not afford relief, give a second tea-spoonful, and likewise the Warm Spirits. A person who is subject to this disease, or has once suffered an attack of Angina Pectoris, should never be without these three remedies; as in the treatment of this disease, it is highly important that relief should be produced as early as possible. I have found Blisters very serviceable, applied to the Chest. The cultivation of a quiet, even temper of mind — the avoidance of all sudden and violent exertions of the strength — a vegetable diet — cold water for drink — early rising, and moderate exercise, are the necessary conditions both of relief and of cure. Wind in the Stomach and Bowels frequently accompanies Angina Pectoris, and when this is the case, Peppermint, Camphor, Paregoric, the Essence of Cinnamon, or of Anise Seed, should be given.

DISEASES OF THE URINARY ORGANS.

INFLAMMATION OF THE KIDNEYS.

THE diseases to which the kidneys are subject are congestion, inflammation, hypertrophy and atrophy, degeneration and mechanical disease. Acute congestion is usually brought on by sudden suppression of the action of the skin, as by lying down to sleep on damp ground, or by the action of some poisons, such as belladonna or alcohol. It results, also, from other forms of disease, as scarlet fever and malarial fevers.

All inflammatory states of the kidney are of grave moment; usually, they are attended with much fever, suppression of secretion, and often with dropsy. The kidney sometimes becomes hypertrophied or enlarged, and when of the simple form is likely to be attended with diuresis or an increased flow of urine. Atrophy, or wasting of the kidney, is attended with a decrease of the renal secretion. One of the forms of mechanical disease is produced by the formation of stone or calculus in the kidney, a very painful affection, causing often faintness and vomiting during the passage of the calculus.

Treatment.—The first thing done should be to relax the system, and produce perspiration. This may be accomplished by giving an emetic, slowly, at first, of Lobelia. After which, apply over the region of the Kidneys a hot fomentation of Hops, Wormwood and Tansy, simmered in Vinegar and Water, with a little Bran mixed with them.

Then give the following Diuretic Drops: Sweet Spirits of Niter, 2 ounces; Oil of Sweet Almonds, 2 ounces; Spirits of Turpentine, 1 ounce; mix, and give a tea-spoonful every three or four hours during the day, in a cup of warm Spearmint Tea.

Let the patient also drink freely of a decoction made of Marshmallows (leaves or root) and Mullen Leaves; or either of them, if both cannot be procured. The Horsemint may be added; it is a good diuretic in this complaint, and will give the decoction a more agreeable flavor.

If the pain is severe, or of long standing, use the following Liniment: Oil of Juniper, ½ ounce; Oil of Spearmint, ½ ounce; Spirits of Tur-

pentine, 1 ounce; Tincture of Cayenne, 1 ounce; Laudanum, 1 ounce; Alcohol, ½ pint; put the oils in the Alcohol first, and then add the others. Bathe the small of the back and over the region of the Kidneys freely with this, and let the patient sit with his back to the fire, or apply a warm Iron or Brick, to drive the Liniment in.

Should there be much disposition to vomit, give a little Saleratus in Peppermint Tea. A pill of Opium, or forty or fifty drops of Laudanum, may be given occasionally, in case of excessive pain, and the patient placed in a Warm Bath.

A purgative should be given every day, if the patient is of a costive habit; and after the urgent symptoms are removed, a Strengthening Plaster should be worn on the back for a week or two.

INFLAMMATION OF THE BLADDER.

This disease will be known by a burning pain in the region of the Bladder (bottom of the abdomen); frequent and painful discharges of urine; an almost constant desire to make water; hard pulse, and symptoms of fever.

Causes.—The use of acrid diuretics, as Cantharides; stricture in the urethra; irritation from a stone being lodged in the Bladder; mechanical injury, and the usual causes of inflammation.

Treatment.—The treatment in this case must be very similar to that for Inflammation of the Kidneys. The warm Hip Bath—the patient sitting in warm water, which extends above the hips—should be employed twice a day, and the Diuretic Drops named for the preceding disease should be given in Spearmint or Horsemint Tea. Fomentations of bitter herbs should be applied over the lower part of the abdomen.

A decoction of the Marsh-mallows should be drunk constantly; it is a sovereign remedy in diseases of the urinary organs, and may be relied upon as a specific in this. A purgative should be given every day. The patient must abstain from everything of an acrid or stimulating nature, both of food and medicine. In severer cases, apply a Mustard Plaster or Blister over the region of the Bladder. A decoction of Burdock and Mullen is also good as a drink.

BLEEDING FROM THE URINARY ORGANS.

Voiding of bloody Urine denotes danger, particularly if it is mixed with purulent matter, as it then shows that there is ulceration somewhere in the Urinary passages.

Causes.—It is sometimes a symptom of other diseases, or may be induced by external injuries, blows, bruises, or falls; by straining, and lifting a heavy weight, jumping, or hard riding on horseback. It may also arise from Stone in the Bladder, the Kidney, or lodged in the duct which leads from the Kidney to the Bladder. It may also arise from severe Inflammation of the Bladder. It is often caused by strong, irritating diuretic medicines.

Symptoms.—If the bleeding proceeds from the Bladder, caused by a stone being lodged in it, or by inflammation of that organ, it may be known by a sense of heat and pain at the bottom of the abdomen or bowels, and perhaps much difficulty in making water. If it comes from the Kidney or Urinary Duct, caused by a stone, it will be attended with a sharp, acute pain, and feeling of weight in the small of the back, and perhaps to one side.

Treatment.—The treatment in this complaint should consist mainly in giving emollient diuretics and astringents. The specific in this, and all similar diseases of the Urinary organs, is the Marsh-mallow. There are two kinds of the Mallow, the high and low, and they grow in nearly all parts of the country. Either will do. A strong decoction is to be made of the leaves, buttons, or roots, and drank freely—from a pint to a quart a day. A decoction of Mullen Leaves and Horsemint, is also very good. A little Horsemint or Spearmint may be added to the Marsh-mallow.

If calculi or stone in the Kidney, or Ducts, is suspected, Emetics and Cathartics should also be given.

RETENTION OF URINE.

From various causes, as inflammation of the neck of the Bladder, of the Prostate Gland, from the effects of Gravel, Stricture of the Urethra, and the like, the Urine is liable to be retained in the Bladder, or perhaps in some other of the Urinary organs, either partially or wholly, and thereby causing great distress.

Treatment.—The following will generally be found sufficient in all ordinary cases: Make a pint of strong Spearmint Tea; add to it ½ gill of good Holland Gin, and 1 ounce of Spirits of Niter; let the patient drink the whole of this, at three or four times within an hour. Repeat the same within the next two hours, if the first is not sufficient. Or take Essence Spearmint, Essence Juniper, and Spirits of Niter, of each, 1 ounce; give a table-spoonful every half hour until relief is obtained. If there is much pain and suffering, add 20 drops of Laudanum to each dose, for three or four times.

At the same time, let the patient sit over the hot vapor of bitter herbs, with a blanket around the waist or shoulders, so that the steam may be confined to the lower part of the abdomen and region of the bladder. After which let him go to bed, and apply a hot fomentation of the herbs, or cloths dipped in the water of the same, to the lower abdomen, as hot as can be borne, renewing often. Continue giving one or the other of the preparations I have recommended. Or if you can not get them, give freely of a strong tea of Watermelon Seeds, or if not of these, of Pumpkin or Cucumber Seeds.

This course will generally succeed in a few hours at most. But if it fails, put the patient in a Hot Bath, or as warm as can be borne, for ten, fifteen or thirty minutes. This, with the use of proper diuretics, as Spearmint, Spirits Niter, a tea of Melon Seeds, Cleavers, and the like, can hardly ever fail. Opium, or Laudanum, should always be given if there is much pain.

Browned or parched Egg-shells, finely powdered, and given in half tea-spoonful doses every hour, is said to be a specific.

If, owing to severe stricture, or stone lodged in the neck of the Bladder, all these and similar measures fail—which they will not do once in a hundred cases—a Catheter must be introduced; in which case it will be best to send for a physician, or some one who understands using the instrument.

Should there be any inflammation or soreness in the parts, give for a few days a decoction of Marsh-mallow and Mullen, and pursue a course similar to that recommended for Inflammation of the Bladder.

INCONTINENCE OF URINE.

By Incontinence of Urine, is meant an inability to retain it, or an involuntary discharge of it. The difficulty mostly occurs in children; but sometimes adults are troubled with it. It usually occurs at night, during sleep. There is also sometimes a constant disposition to void the Urine, every few minutes, owing to slight inflammation or irritation of the Bladder or Urethra.

Treatment.—Where the difficulty is not dependent on the cause just stated, it is usually owing to a lax and debilitated condition of the parts, and must be treated with tonics and astringents, such as act more or less on the Urinary organs.

Take the Muriated Tincture of Iron, 1 ounce; Tincture of Cantharides, ½ ounce; mix, and to a child give three drops for each year of its age, three times a day, and let it drink of a cold decoction several times a day, made of Cherry-tree Bark, Bayberry Bark, and Dandelion Root.

Proper attention should be paid to the skin. The difficulty is often owing to checked perspiration, or an unhealthy condition of the perspiratory function. The Cold Bath, or washing the patient in cold water, should be employed morning and evening, and the patient, if a child, should be made to void the Urine just before going to bed. The difficulty is often owing wholly to a neglect of this habit, and, consequently, to the carelessness of parents and those who have charge of the young.

In all ordinary cases of Incontinence of Urine, whether in young or old, the tincture of Cantharides will generally be found sufficient. To an adult, it should be given in ten to fifteen drops twice a day, and to children less in proportion to age.

GRAVEL.

This disease is caused by a collection of sand, or the formation of stone, or calculous substances, in some of the urinary organs, as the Kidneys, Ureters, or Bladder.

The agents which form the Gravel or Stone, are, no doubt, originally contained in what we eat and drink. When the system is in a healthy state, and all the functions are duly performed, these calculous substances pass off by the proper secretions; but when, owing to debility of the urinary organs, especially the kidneys, there is an excess of what is called uric acid in the system, a chemical union takes place between it and the calculous particles, thus forming stone, or larger particles, until sometimes these formations become too large to pass off through the urinary ducts, and the consequence is, the difficulty or disease known as Gravel.

Symptoms.—One of the leading symptoms in this disease, is a frequent desire to void the urine. This is especially the case when the Gravel or Stone is in the bladder. There is great irritation about the neck of the bladder, which sometimes extends along the urethra.

If the Stone is lodged in the kidney, there will be a fixed pain in the small of the back, or region of the kidney; sometimes acute and severe. When the person is voiding urine, the stream will sometimes be suddenly stopped for a spell, caused by the Stone closing the passage at the neck of the bladder.

Treatment.—A fit of the Gravel, particularly if the urine is retained, or voided with difficulty, is to be treated the same as directed for Retention of Urine. If the pain is severe, as is generally the case, give, first of all, an opiate; to a grown person, from 40 to 60 drops of Laudanum; and then make use of the measures recommended for Retention of Urine; suitable Diuretics, Warm Fomentations, and if need be, the Warm Bath.

As soon as the urgent symptoms have been relieved, a Hydragogue Cathartic should be given; the Anti-bilious Physic, or Podophyllin, with Cream of Tartar. The patient should then take such remedies as are calculated to destroy or dissolve the Stone, and counteract the tendency in the system to its formation. There are numerous remedies recommended for this purpose. Among the best I know of is the following: Take ½ pound of the root of Queen-of-the-Meadow (which may generally be had at a Botanic drug store), and half as much Horsemint; make a strong decoction by boiling 2 gallons of water down to 2 quarts; strain and add ½ ounce powdered Niter (Saltpeter) and 1 ounce Carbonate of Soda. Take of this half a tea-cupful three or four times a day. Also, take ½ ounce of Castile Soap and 20 drops Oil of Juniper; make into sixty pills, and take two three times a day.

The juice of Red Onions is said to be a solvent for the Stone. A gill, or a half a tea-cupful, is to be drank morning and evening, for three days.

If there is Inflammation of the Bladder or Kidneys, adapt the treatment to the case, as recommended under those complaints.

There is an herb which grows in some parts of the West, perhaps generally called Gravel Root, which is said to be a specific in this disease, when used freely in the form of decoction. I am not acquainted with it, but doubt not that it possesses valuable properties.

BRIGHT'S DISEASE—ALBUMINURIA.

BRIGHT'S Disease is a term applied to a class of diseases of the kidneys, and so named because Dr. Richard Bright, an eminent English physician, first recognized the affections and made them known. Of these there are several varieties, but they may be spoken of under two divisions, *acute* and *chronic*—the former represents the inflammatory, and the latter, the degenerative form. The college authorities define them as "several forms of Acute and Chronic disease of the kidney, usually associated with albumen in the Urine, and frequently with dropsy, and with various secondary diseases resulting from determination of the blood." The acute form commonly arises from exposure to cold, from alcoholic intemperance, or as a complication of certain diseases, Erysipelas, Diphtheria, Measles, and especially of Scarlet fever, of which it is one of the most frequent and serious consequences. In some forms the complications of Bright's disease are extremely difficult to manage.

The SYMPTOMS are pain in the back, vomiting, and febrile disturbance, at first; perhaps followed by dropsy in a more or less extended degree, varying from slight puffiness of the face to an accumulation of fluid sufficient

to distend the whole body, and occasion serious annoyance in respiration. The urine is reduced in quantity, and is of a dark, smoky or bloody color.

When the functions of the kidneys are interrupted, as is the case in both the *acute* and *chronic* forms of this disease, serious results are apt to follow the retention in the system of the effete matter which is in a healthy state of the system thrown off. The blood, as a consequence, becomes impoverished and contaminated, and thus unfit to carry forward the processes of healthy nutrition. And so inflammatory affections within the chest come on; but the most serious complications are in the nervous symptoms which often arise from the poisonous effects at work in the system.

Treatment.—Good results are obtained by local depletion; cupping over the loins relieves pain in the back; and the flow of urine will likely increase when eight or ten ounces of blood have been drawn from a grown person, or two or three from a child of three to four years.

Free action of the skin and bowels must be maintained. (See the article "Inflammation of the Kidneys," for hot fomentations.) The hot-air bath and antimonial remedies are important. Encourage free perspiration by bedding the patient in blankets. Antimonial wine may be given in doses of 15 to 30 drops every four or five hours. Keep the bowels open by doses of 20 to 60 grains of Compound Jalap powder, repeated daily; or on alternate days give Podophyllin in one-grain doses.

Keep the patient free from exposure to cold; at rest in a comfortable bed, in a room of moderate and uniform temperature, but properly ventilated. The food should be light; of gruel, arrow-root, milk or weak broth, and the best drink is pure water; the surest way to get it is to boil and let stand until cool. When the tongue becomes clean, and the symptoms generally are improved, good beef-tea may be given, and as digestion improves, solid food may be used in moderation; fish or fowl, and then mutton or beef. Flannel must be worn next the skin, and cover the body and limbs. During convalescence and after each meal small doses of the syrup of phosphate of iron, or citrate of iron and quinia, should be taken.

CHRONIC BRIGHT'S DISEASE

Is either a continuation of the acute affection, or is slowly developed without the occurrence of active symptoms; it is, however, much less amenable to treatment. It is connected with further and permanent changes, and has given rise to three sub-divisions, called granular, fatty and lardaceous kidney. It is sometimes the seat of parasitic developments, of cancers and of tubercle.

Treatment.—Each case requires special study, and a line of treatment in detail, based on its individual history. In the first place, it is necessary to determine in all cases the particular organ or tissue which seems to be acting vicariously. Only the close observations and careful watching of a competent physician can meet the necessities of such a case, therefore find the man you need. Patients should go about as long as they are able, but be careful to clothe themselves with flannel and woolen garments, and be otherwise well protected from cold. Let the diet be duly regulated, and measures taken to reduce the quantity of urea, and other constituents formed daily, to the capacity of the diseased kidneys for the work they are able to do.

EXCESSIVE FLOW OF URINE—DIABETES.

THIS disease is characterized by frequent discharges of large quantities of Urine. It is usually attended with costiveness, voracious or increased appetite, and yet with great debility, emaciation, and more or less hectic fever. The Urine contains grape sugar in excess, and the quantity passed is often enormous, frequently greater than both the food and fluids taken would seem to have been. The exhaustion which follows the loss of fluid is often accompanied by other changes, due to the presence of sugar in the other secretions and in the blood, and to the modifications of nutrition thereby. The disease is primarily due to changes having their origin in the nervous system, and commonly proves fatal.

Diabetes may be induced by mental as well as physical shocks, affecting primarily the brain. Note the following: A healthy boy of eleven years, sent by his father, a carpenter, to give an order for timber at a lumber yard, where was chained a large savage dog, of which the boy knew nothing until attacked by the furious animal. He quickly got out of reach of the chained brute, but, paralyzed by fear, could not stir for some moments, was taken home in a state of extreme prostration, and from that hour was stricken with diabetes, of which he died within three months.

SYMPTOMS.—The most striking symptom, especially in the earlier stages of the disease, is an increase in the quantity of Urine, accompanied, as a matter of course, with a frequent desire to pass it; the patient being often compelled to rise for that purpose two or three times, or oftener, during the night. The disease is apt to come on very insiduously and gradually, and may progress for months without exciting much notice, until other symptoms begin to succeed.

The appetite is usually much greater than in health, sometimes voracious; while digestion is generally imperfect. There is apt to be uneasiness in the stomach after meals, with flatulence, sour belchings, and irregularity in the bowels. Great thirst is a never-failing attendant. The patient wants to drink nearly all the time, and this fact often attracts his attention, before he is aware of the true nature of his condition. Perspiration is very imperfect, or totally suppressed; the skin is dry and harsh; the gums often red, swollen, and sometimes ulcerated. The tongue is white and foul in the centre, with red edges; the mouth dry and parched, and the taste vitiated.

As the disease progresses, the patient complains of pain and weakness in the loins, and region of the kidneys, followed with general debility, swelling of the legs and feet, emaciation, hectic fever, cold feet, sense of weight at the pit of the stomach, difficulty in breathing

easily fatigued, with a tendency to sleep, general languor, and depression of spirits. The disease, if not checked, may prove fatal in five or six weeks; but it usually runs longer, sometimes for several years, before it wears out the constitution.

Treatment. — Restorative medicines constitute the principal agents to be used in this disease. The following compound should be used: Take Beth Root, Black Cohosh Root, Geranium Root, and Cherry-tree Bark, say 4 ounces of each; let the whole be powdered and well mixed; then take of the compound about ½ ounce, pour on it 1 pint of boiling Water, stir, and when cold, drink that quantity during each day, at intervals. Continue this throughout the treatment, or till the whole is taken.

The following pills should also be taken, to act on the liver, skin, and secretions: Podophyllin, 10 grains; Sanguinin, 20 grains; Cayenne, 40 grains; Ipecac, 20 grains; make into 40 pills, with Extract of Dandelion, and take one, night and morning.

Attend well to the skin; sponge the body all over every night with the warm Alkaline or Saleratus Bath, and rub well. A strengthening Plaster should be worn on the back, over the kidneys.

The following restorative bitters may also be used: Gentian, Spikenard, and Colombo Roots, Chamomile Flowers, Balm of Gilead Buds, and Peruvian Bark, of each 1 ounce; powder or bruise all, and cover with three ½ pints of boiling Water; when cool add 1 quart of good Holland Gin, and take ½ wine-glassful three times a day. If there are feverish symptoms, take a dose — 10 grains to ½ tea-spoonful — of the Diaphoretic Powders at night.

If the patient does not improve under this treatment in a couple of weeks, give also an emetic once or twice a week, an active purgative or Mandrake and Cream of Tartar, and three pills night and morning, composed of Cayenne and Quinine, each 30 grains; Extract of Dandelion, 1 dram; made into 40 pills. After these are taken, continue the previous treatment.

Proper diet is an important matter. This should consist principally of fresh meats; beef is the best. Little or no vegetables; avoid every thing from which *sugar* can be extracted, and drink as little as possible. Boils very commonly attend Diabetes.

DISEASES OF THE SKIN.

ST. ANTHONY'S FIRE—ERYSIPELAS.

THIS disease is characterized by a shining red inflammation of the parts affected, accompanied with more or less swelling, and a distressing irritation, with a stinging, smarting, itching, burning

sensation. The irritation is sometimes so great as to almost set the patient crazy.

It is generally superficial; that is, affecting only the skin; and most usually attacks the face, ears, and head; sometimes only the feet, hands, and legs; at other times it may appear on the back, but may spread over most of the body. It occasionally becomes deep-seated, and is apt to gather and break; it is then called Phlegmonous Erysipelas.

In the progress of the disease, after a few days, especially where it is confined to the face and head, it is apt to form a number of little vesicles or blisters, containing a yellowish fluid, which will sometimes be thin and watery, and at other times tough and sticky, adhering to the parts. Sometimes, in severe cases, these vesicles will run together, forming a complete mass or scab; the face will be greatly swollen, the eyes perhaps closed, and the patient will suffer great pain in the head, with fever, thirst, restlessness, and perhaps delirium.

When it appears on other parts of the body, it is not apt to form blisters, but the burning and itching will sometimes be intense and excruciating. It will remain on the surface a few hours, perhaps, in red, burning spots, slightly raised or swollen, and then go in and disappear for awhile, often rendering the patient very sick at the stomach; and then perhaps appear again, and so continue for several days. It is a very distressing complaint, and when it affects the face and head is often dangerous.

Causes. — This disease undoubtedly arises from impurities and humors in the blood, caused by morbid secretions being retained in the system. It may be induced by derangement in the function of digestion, by suppressed perspiration, and by over-heating the blood. It also arises from wounds and injuries sometimes, and it is then called Traumatic Erysipelas. In some persons its attacks are periodical, coming on once or twice a year; and persons who have suffered from frost-bite are apt to be troubled with it in the frost-bitten parts, during the winter and spring seasons.

Treatment. — There is no doubt that the digestive apparatus is more or less deranged in this disease, and this derangement may be the exciting cause. It is always well, then, to commence the treatment with a pretty thorough emetic. It will do good beside cleansing the stomach, by rousing the organs of secretion and excretion to a more healthy action.

If the attack seems likely to be very severe, the Vapor Bath, or steaming over bitter herbs, should then be employed, and a thorough sweat produced. After this, a purgative should be given, such as the Anti-bilious Physic, with double as much Magnesia. The stomach will generally be found in a sour or acid condition, and for that reason

an antacid, as Magnesia, or Chalk, or Bicarbonate of Soda, should be used freely. I prefer in this case the Magnesia.

The Vapor Bath, or steaming, is very important; where the eruption appears more or less over the body, and there is great heat, itching and pain, it will generally give immediate relief. If the disease is located about the face and head, the parts affected should be steamed over a decoction of bitter herbs, as Catnip, Tansy, Boneset, Hops, etc., two or three times a day. And in the mean time, apply over the affected parts a poultice of Cranberries, made by boiling a pint or two of the berries, soft, allowing plenty of juice to remain; then take about a tea-cupful, juice and berries, mash, and mix in a little powdered Elm Bark, or a little Wheat Bran, spread thin on a cloth, and apply. Renew two or three times a day. The Cranberry Poultice is considered by many a specific in this disease. When it affects other parts of the body, bathing with the juice or decoction of Cranberries may be sufficient.

If the disease should not be checked, and vesicles or blisters should form, and ulceration take place, you must poultice with Elm Bark and Hop Yeast. It would also be well to wash the ulcers with a decoction of Wild Indigo, either of the root or leaves.

Various washes have been recommended to be applied to the affected parts, either to cool down the inflammation or kill the humor. Among the best is equal parts of Tinctures Lobelia and Blood Root; add Vinegar; to be applied three or four times a day. A decoction of common Smartweed (Polygonum Punctatum) and Mayweed (Dog Fennel) is highly recommended as a wash, to be used cold. As a cooling wash, a solution of Borax and Sugar of Lead is sometimes very good. Mix 2 drams of each in 1 pint of rain-water. These washes, of course, are to be used before vesication or blistering takes place. The patient, during the whole treatment, should drink freely of a tea made of Burdock Root, Sassafras Bark, and Elder Flowers.

In the chronic form of this disease (that is, where it is known to be in the system by its appearing every few months upon some parts of the body), in order to eradicate it from the system and effect a permanent cure, a course of constitutional treatment must be adopted. Some good Cathartic Pills should be taken, one or two a day, to keep the bowels loose. Also the following preparation: Take of the Wild Indigo Root, Blood Root, and Poke Root, 1 ounce of each dry, or double the quantity if green; Holland Gin, or good Whisky, 1 pint; let stand a week to form a tincture. Add to it 2 drams of Hydriodate of Potash, dissolved in 1 ounce of water. Of this take a teaspoonful three times a day. At the same time make a decoction of Yellow-dock Root, bark of the Bittersweet Root, Sassafras Root, and Elder Blossoms, and take a wine-glassful three or four times a day. This may be made into a syrup, if preferred, by adding, when hot, a pound of white Sugar to each quart. Bathe the whole surface two or three times a week in weak Lye-water, and avoid all Spirits, Malt Liquors, Coffee, and every stimulant. This treatment should be pursued for at least a month or two.

In Traumatic Erysipelas (which arises from wounds, by appearing

on their edges and spreading thence over the surface), touch the edges occasionally with Tincture Cayenne, or No. 6, to excite a healthy action, and poultice with Slippery Elm. If there is an appearance of gangrene, wash with a decoction of Wild Indigo, or Smartweed, and add some Yeast to the poultice.

In Phlegmonous, or deep-seated Erysipelas, which generally appears about the thighs and hips, rely on poultices of Elm Bark and weak Lye, and repeated purgatives and emetics.

BLACK TONGUE ERYSIPELAS.

THIS is a detestable disease, but fortunately, does not occur very often. It is generally an epidemic, and proves very fatal. It usually commences with a sore throat; soon the tongue, throat, and whole neck begin to swell; the tongue and inside of the mouth turn black; the outside of the neck becomes of a livid purple, in spots, which gradually change to dark green or black, when, if relief is not soon obtained, mortification closes the scene, or the patient dies from suffocation.

Treatment.—In this disease the most thorough and vigorous treatment must be employed from the very first symptoms. A thorough emetic of Lobelia should be given at least once a day, together with frequent doses of Tinctures Myrrh and Cayenne, or the No. 6. Myrrh is an antiseptic (anti-mortification) and Cayenne a powerful stimulant, both being highly essential in this complaint. Follow the emetic with an active purgative.

Bathe the neck with a Liniment composed of equal parts of the Oil Sassafras, Oil Pennyroyal, Spirits Turpentine, and Tincture Cayenne. Apply to the throat and neck a hot fomentation of Smartweed and Dog Fennel, made by boiling a handful of each, the whole to be put in a thin cloth and applied to the neck as hot as can be borne. When they become cool or dry, return them to the same vessel and decoction (which should be kept hot for the purpose), apply again, and so continue. The patient should also drink a little of the same decoction, occasionally, as warm as he can swallow it.

In case gangrene or mortification is threatened, apply to the neck a strong Lye Poultice, made of Elm Bark or Bran, with a tea-cupful of Hop Yeast. The patient should also swallow a table-spoonful of the Yeast every little while. After poulticing for a couple of hours, change to the fomentations again, and so alternate. If you have, or can get the Wild Indigo, make a decoction, and give the patient a table-spoonful every two or three hours; and also add some to the poultice, and wash the neck with it occasionally. Pursue the above course in the most efficient manner, and you will seldom fail, if you begin in time.

Under the regular, slow, Old School treatment, four out of every five die of this disease. This complaint generally occurs in the winter season; hence you will see the propriety of laying in a stock of medicines (herbs and roots) at the proper season—not only for this disease, but for all others.

TETTER, OR SALT RHEUM.

THIS is an inveterate and very troublesome eruption, or "breaking out," which appears on different parts of the body, but most commonly on the backs of the hands, or on the face. It appears usually in very small vesicles, which break and discharge a thin corrosive, and irritating fluid, attended with severe itching. Sometimes scabs form upon the affected parts, which, after a time, dry up and scale off, or disappear, to be succeeded by others. The affection is too common and too well known to need any further description. It may be proper to state, however, that there are several kinds of Tetter, as the Dry Tetter, which is the most common and simplest form of the disease; the Pustulous variety, which appears at first in the form of separate pustules, which gradually run together and form clusters; the Miliary Tetter, which appears indiscriminately over the body, but most usually on the breast, or about the groins and scrotum; and the Eating, or Corroding Tetter, which appears usually in the form of small and painful ulcerations, which run together and collect into large spots, accompanied with more or less inflammation, and discharge large quantities of thin, watery matter. The treatment in either variety, however, should be about the same, except that for the mild and dry form, nothing but external applications will be required; while in the others it may also be necessary to make use of some alterative or constitutional treatment.

Treatment.—In the first place, wash the affected part with the following: Take 1 or 2 ounces, each, of Yellow-dock Root and Blood Root, mash or bruise, and put to them ½ pint of Alcohol and as much good Vinegar; let it stand a week or two to digest. This should be applied once or twice a day, and the following ointment applied as often: Take fresh Butter, 4 ounces; Venice Turpentine, 1 ounce; and Red Precipitate (Red Oxide of Mercury), 3 drams; mix the whole together well, and apply a little to the part affected, once or twice a day, after washing with the tincture I have named. This ointment will cure any Tetter, even without the use of any thing else. It will also cure Ringworm, and any kind of Itch.

The following is also a valuable remedy for Tetter and Ringworm:

Take equal parts, say 1 ounce each, of Tinctures Lobelia, Cayenne, and Stramonium (Jimson) Seeds, and Oil of Amber; mix, and wash the parts two or three times a day with it.

In case it is necessary to use an alterative, to purify the blood, make a strong decoction of the roots of Burdock, Yellow-dock, Yellow Parilla, and Sassafras Bark, and to each pint of it add 1 dram of Iodide of Potassa. Dose: a wine-glassful, morning and evening.

SHINGLES—HERPES ZOSTER.

HERPES is Tetter, and because this disease in some respects very much resembles Tetter, it is by some authors called *Herpes Zoster*.

SYMPTOMS.—In this complaint, the patient's attention is usually first attracted by the sensation of heat, tingling or itching in some parts of the body, where, on examination, he finds several red patches of an irregular form, at a little distance from each other, upon each of which numerous small pimples or elevations appear, in clusters. These are little vesicles, and in the course of twenty-four hours they enlarge to the size of a white mustard seed, and appear transparent and filled with a whitish fluid. The clusters or patches are of various diameters, from one to three or four inches, and are surrounded by a narrow red rim or margin, similar to Tetter or Ringworm. During the next few days, other clusters appear in succession; and what is peculiar and distinguishing in this disease, these patches, as they appear, always extend in a certain and regular direction from the first one — generally around the body toward the spine at one end, and toward the lower end of the sternum or breast-bone at the other, seldom going more than *half* round the body, however. Sometimes they ascend across one of the shoulders. The eruption is sometimes very distressing, owing to the intense itching; otherwise the disease seldom occasions much disturbance. Though sometimes, especially in the commencement, there is a loss of appetite, languor, chilly sensations, headache, sickness at the stomach, and more or less fever, for a few days. The eruption usually continues from fourteen to twenty days, when the little vesicles break, exude their contents, followed by scabs or exfoliations, which gradually dry up and fall off, when the skin slowly regains its natural appearance. The complaint affects persons of all ages.

Treatment.—Laxatives or mild purgatives, diaphoretic or sweating medicines, cleansing the surface with warm Alkaline Baths, and

alteratives to purify the blood, constitute the proper treatment in this complaint. Very good treatment to commence with is a good Lobelia emetic, followed with a sweat, or the Vapor Bath; then a mild purgative — the Anti-bilious Physic and Cream of Tartar, or a dose of Vegetable Cathartic Pills; after which, let the patient use freely of a tea or decoction made of Burdock, Yellow-dock, and Sassafras Root for several days. Sponge the body at night with warm Saleratus Water, or warm Water, with a little Lye from wood-ashes in it.

HIVES—NETTLE RASH.

ACCORDING to the medical books in this country, the term Hives is generally used to mean Croup; in England, it means a species of Chicken-Pox. But neither is correct. Hives, properly speaking, as generally understood by the people, is a peculiar eruption or cutaneous disease; a disease showing itself on the skin. It makes its appearance very suddenly, generally in large, red blotches, or patches, most commonly on the back and sides of the body, on the arms and thighs; sometimes spreading nearly over the whole body. These blotches raise up in thick whelks, irregular in shape, from the size of a ten cent piece to several inches in extent, often running together, of a florid or purplish red color, and attended with intense itching, stinging, or burning sensation, very much like that produced from the sting of nettles — hence the name of Nettle Rash. It usually appears suddenly, without any premonitory symptoms, and after tormenting the patient an hour or two, often disappears as suddenly as it came, though it frequently continues all night, and disappears in the morning, to return again at night. It is almost exclusively confined to children or young persons, between the ages of five and fifteen years.

It is unquestionably a disease of the blood, caused by a derangement or impurity of the circulating fluid. Whatever will produce a derangement of the circulation of the blood, may also produce this peculiar and tormenting complaint. Over-heating one's-self by exertion, followed by sudden cooling, and check of perspiration, seems the most rational cause.

Treatment.— One of the best applications is that of Wheat Flour, freely applied and rubbed over the surface, or wherever the eruptions appear. Therefore, rub the parts freely with Flour, and if very extensive, apply Flour to the whole body, and give the patient freely of Saffron Tea; or if that is not convenient, give Sage and Sassafras

Tea. Then follow, as soon as urgent symptoms are relieved, with cooling Physic, once a day for several days in succession. An excellent article for this purpose is Cream of Tartar and Sulphur, three parts of the former to one of the latter, mixed with Molasses until it is quite thick, giving a tea-spoonful of the mixture two or three times a day, for several days. This is cooling and purifying to the blood, and if it does not operate actively enough, a dose of the Antibilious or any other mild Physic, such as Senna, or Salts, should be given.

Attend also to the skin. Give the patient a Warm Bath every evening, or a Sponge Bath, by washing the whole body in Warm Saleratus Water. Do this for several evenings, and at the same time let the patient drink a little Sassafras or Saffron Tea, warm or cold, through the day. Whenever the "blotches" appear, apply the Flour freely. The disease is not dangerous, and a few days with the foregoing treatment will generally suffice to eradicate it from the system.

COMMON ITCH—BARBER'S ITCH.

THE Itch, medically called *Scabies*, is an eruption or breaking out of small, pointed vesicles, containing a watery fluid, and causing at times a most violent itching. The eruption appears first on the hands between the fingers, and finally extends to the inside of the wrists, arms, and inside of the elbow joints. It will also extend more or less over the body, and is too well known to need further description. It is contagious or catching, being communicated by contact, and if not cured may last for years, and perhaps always. There is supposed to be a kind called the Seven Years' Itch; but the common kind will last seven years, and even longer, if left to itself. There is also a variety which has received the name of Barber's Itch, which appears usually on the face, chin, and among the whiskers. It is supposed to be caught in barber shops while being shaved; but this is probably but incidental, and not the true origin of the disease. No doubt, it is often communicated in this way; so may the ordinary Itch, as well as Tetter, Ringworm, and some other complaints. This variety of Itch is confined almost exclusively to the male sex, and generally to men or those who shave; and, as I have said, appears on or about the face, it may be on one of the lips, or the chin, or about the lower jaw; at first there will be few small, red pustules, attended with a sense of burning and intense itching. After a few days these pustules dry up and peel off in thin, dry scales; while the eruption extends, other pustules appearing and scaling off in the same way, until

it becomes very sore and troublesome. If the disease is allowed to continue, it will be likely to become chronic, gradually spreading over a larger surface, and extending more deeply into the skin, causing more or less inflammation, redness of the part, attended with heat, burning itching, and rough thick scales.

Treatment.— The treatment of all forms of Itch is about the same; that is, what will cure one kind will cure the other. Sulphur is, perhaps, the most certain and effectual remedy. It is best used in the form of ointment, generally mixed with Lard,* but should be used with some caution, when it is necessary to apply it to any great portion of the body, as where the disease has extended pretty generally over the body. Persons have been known to lose the use of their limbs, by the joints becoming stiffened, from exposure and taking cold while being anointed with Sulphur Ointment. Where the disease is confined to a small surface, as on the hands or face, there is no danger. Still, it would be well to avoid exposure to severe cold and dampness, for a little while; the same may be said in regard to the use of any Mercurial Ointment, as that of the Red Precipitate, which will also cure the Itch, as well as Tetter and the like.

For the ordinary Itch, either of the following preparations will answer: Take Lard, 2 ounces; Sulphur, 1 ounce; Sal Ammoniac in find powder, 1 dram; Oil of Lemon, 10 drops; mix well, and use once a day as an ointment, first washing the parts well with strong Soapsuds. Or: Take Lard, 2 ounces; Red Precipitate, 2 drams; Burgundy Pitch, ½ ounce; melt the Lard and Pitch together; while cooling stir in the Precipitate, and mix well. Apply of this in small quantities once or twice a day, first cleansing well with Soap and Water.

The Itch is purely a local disease of the skin, and consequently it is seldom necessary to take any medicine internally, unless the disease is of long standing, and extended very generally over the body, in which case the patient should take Sulphur and Cream of Tartar, and drink Sassafras Tea pretty freely.

As for the Barber's Itch, the same ointment, applied freely once or twice a day, will generally be sufficient. If there is much inflammation and soreness, poultice the part at night with Elm Bark, and use the ointment during the day. The Tetter Ointment (See Medical Compounds) will also cure it: Equal parts of Tinctures of Lobelia, Blood Root, and Stramonium Seeds, and Oil of Cedar or Amber, to be used two or three times a day as a wash, will also cure it. An ointment made by mixing Lard, 1 ounce, and Sulphate of Zinc, 2 drams, is also good.

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* Lard, in later days, is not so much used for Ointments, etc., because superseded by a better substance, made from Petroleum, which does not become rancid, and is known to druggists under the various names of Petrolina, Vaseline, and Cosmoline, and is for sale, in tin cans, at 30 cents to $1 per pound.

This substance is medically efficacious if applied to the surface of the skin in such diseases as Tetter, Itch, Sunburn, Fever Sores, Frostbites, Pimples, Blotches, etc.

DISEASES OF THE ORGANS OF MOTION.

RHEUMATISM.

THERE are two forms of this disease, differing from each other and easily known; one of which is called *Acute*, and attended with fever, and the other *Chronic*, which means a lingering disease without fever. The Acute or Inflammatory Rheumatism is known by sharp pains in the joints and muscles, and back, knees, ankles and hips, extending usually over the whole system; loss of strength, shivering, heat, thirst, and general restlessness, and but little sleep; tongue white; the skin dry and hot, and generally covered with partial sweats. The bowels are generally costive or bound, and the pulse hard and full.

Chronic Rheumatism is generally called by the people Rheumatiz. This disease is not accompanied by fever; the joints are severely pained, swollen, and very tender, and usually stiff, sometimes hot, then again cold. After this disease has been of long standing, the joints become enlarged, and distortion takes place.

There are few diseases so distressing and tedious as Acute Rheumatism. It may disappear quickly, possibly in a week, and then again it may linger for a long time, in spite of the best treatment, much depending on the constitution of the person, as some are predisposed to this complaint from their ancestors. In many instances, it is brought on by exposure, cold and damp weather, or checking suddenly profuse perspiration, or unusual exertion.

This disease is most generally met with between the twentieth and fortieth year. It is more common among males than females.

Treatment. — In the treatment of Acute Rheumatism, the first effort should be to excite the free action of the skin, or, in other words, sweating by a warm Vapor Bath, if it can be procured; if not, substitute for it a well-warmed bed, with hot bran in bags, or bottles of hot water, or any warm applications that will produce perspiration, or sweating, with warm diluent drinks, such as Pennyroyal, Sage, Balm, Catnip, Flax-seed, or any warm teas convenient. The object is to produce gradually a moisture on the skin, and thereby reduce the fever. In this disease I have found great benefit from the simple use of Lemon-juice, 1 table-spoonful every four hours, lessening the dose gradually. Warm Lemonade is likewise beneficial. The bowels, and the kidneys particularly, should be attended to, some good medicine being taken to secure several evacuations daily. A

dose of Salts may be given in a tumbler of warm water, and repeated every day for several days, so as to keep the bowels freely open.

The first thing to bear in mind in the treatment of every form of Rheumatism is that free action of the skin should be encouraged. Warm Baths of various kinds, and in many parts of the world, have been held in great repute for their curative properties. The Turkish Bath is often of great use to those who are troubled with Rheumatic pains. It is, however, tedious, and the patient must have two hours or more at his disposal. I know people who take a Turkish Bath twice every week with advantage, and consider that they could not get on without it.

Those who will not adopt the advice given to take Turkish Baths may not object to an ordinary Warm Bath, twice or three times a week, staying in the water from twenty minutes to half an hour, or until they perspire freely. I think the action of the ordinary Warm Bath in Rheumatism is improved if the water be made alkaline. This may be done by dissolving in it a quarter of a pound of washing-soda.

I have found, from a long experience, great advantages to be derived in the local or outward treatment of the joints. When they are much swollen and painful, much ease may be given by wrapping them up in a quantity of soft carded cotton or wool, over which wrap, if you can get it, a piece of oiled silk, so as to keep it air-tight. By thus covering the joints, you keep them in a perfect Vapor Bath, and after keeping this covering on for twelve or twenty-four hours, you will find, on removing it, that it is saturated with moisture that is strongly acid. If this treatment is continued, it will give you great relief, as it supports and keeps the limb steady, and at the same time promotes sweating. It is also serviceable in Gout, which is a twin sister of Rheumatism.

Chronic Rheumatism, properly so called, is such as I have before described, being an inflammation of a lower grade, and generally without fever, requiring some variation in the treatment. The back, hip-joints, knees, shoulders, and ankles are the seats of Chronic Rheumatism — often a great degree of numbness in the parts affected. The extremities and even the trunk of the body will often be much colder than in a state of health. In this disease I have found the greatest benefit from local or outward remedies, and have cured or removed the severe pains of many years' standing by the following various remedies.

Care, however, must be taken to protect the parts with cotton, and indeed the whole body, by a covering of flannel. After the hot application is removed, so as to prevent any current of cold air, by spreading the cotton about a quarter of an inch thick, and a piece of flannel sufficiently large to cover the part affected, quilt the cotton to the flannel, so as to cause it to remain spread. When applied, it will produce relief in a very short time.

A cure for Rheumatism an English doctor has found in total abstinence from food. He declares that many cases of Acute Articular Rheumatism have been cured by fasting from four to eight days, while Chronic Rheumatism was also alleviated. No medicines were given, but patients could have cold water and lemonade in moderation. The doctor states that Rheumatism is only a phase of indigestion, and, therefore, can be cured by giving complete and continued rest to all the digestive organs.

Rheumatic Drops. — Ask, in any apothecary store, for Number Six, called Hot Drops. This is one of the most valuable stimulants or tonics. Dose: 1 to 3 tea-spoonfuls in hot water. Good in Colic, Pain in the Stomach and Bowels, and I have used it in Cholera, in doses of a table-spoonful in hot water, affording great relief.

Liniment. — The best external application which we have ever used is the following. I have relieved persons who have been laboring for years under this painful disease. Spirits Camphor, 1 ounce; Spirits Hartshorn, 1 ounce; Spirits Turpentine, 1 ounce; Number Six, called Hot Drops, 1 ounce; Laudanum, 1 table-spoonful; Neat's-foot Oil, ½ pint, and 1 Beef's Gall. Cut the Beef's Gall, and let the green stuff that is in it run into a bottle, then add to it the above articles; shake up well, and cork tight; it is then ready for use. The only part of the Gall that is of any use is the green juice it contains. The larger the Beef's Gall the better. Apply three times a day, rub down freely with this Liniment, and cover with the cotton, as I have before told you. This seldom fails to give relief.

Remedy. — Wonderful cures have been effected by using Poke Root, but care should be taken in using it. Whenever it produces a dizziness or swimming of the head, the dose is too large, and should be reduced. The method of preparing it is as follows: Burn the root slowly to a cinder, and then put it in a quart of good Whisky. The dose is 1 table-spoonful or less, two or three times a day. Or, the Poke Berries put into Whisky and taken, is said to be a valuable remedy.

Remedy. — Four Eggs, well beaten together; Vinegar, 1 quart; Spirits of Turpentine, 4 ounces; Spirits of Wine, 1 ounce; Camphor, 1 ounce. These ingredients to be beaten well together, then put in a bottle and shake for ten minutes, after which to be corked down tightly to exclude the air. In half an hour it is fit for use. To be well rubbed in, two, three, or four times a day before the fire.

An external application of the following Liniment: Take Brandy, 1 pint; Saltpeter, 1½ ounces; Camphor, 1 ounce; Spirits Turpentine, 1 gill; mix altogether. When you use it, shake up well; apply by wetting a flannel, and dry in well, by ironing over the parts affected with a hot iron, as hot as you can bear it.

The use of Wine of Colchicum, or Meadow Saffron, is considered a very important remedy in this disease. The Wine of Colchicum can be obtained at any apothecary store, or you can make it, by infusing 1 ounce of the seeds in a pint of Teneriffe Wine. Let it stand two weeks, occasionally shaking, and then strain through paper. The dose is one tea-spoonful. Or, the following is a very good preparation: Magnesia, 1 tea-spoonful; Wine of Colchicum, 1 tea-spoonful; Water, 1 wine-glassful. This dose can be repeated three or four times a day.

Rheumatism of long standing is always Chronic, when the above remedy will be useful, together with sweating medicines. The bowels must be kept open and diet low. It will be necessary to shield the parts affected by cotton bats, as I have before told you, and rub well with some of the Liniments, or with the following, which

you will find a good remedy: Whisky, 1 pint; Ground Mustard, 4 ounces; mix; and rub the part affected three times a day.

A remedy of great value, as I have before mentioned, is the Poke Root burned. The Berries are also spoken of as a valuable remedy in Chronic Rheumatism. Mix them in good Whisky, and take 1 table-spoonful or more three times a day. The Puccoon, or frequently called Blood Root, is likewise highly extolled as a cure in this complaint. A saturated Tincture of the Puccoon Root may be taken in doses of from 30 to 50 drops, three times a day.

Lumbago is a form, and a very unpleasant one, of muscular rheumatism of the back and loins. Sometimes it is very obstinate and very difficult to cure. The patient is obliged to rest in bed; and it may be a fortnight or more before he is able to bend his back without great suffering.

The Tincture of Guaiacum, which can be obtained at any apothecary store, has long been famous in the cure of Chronic Rheumatism. Sulphur is a medicine which has often been successfully used in removing the disease.

When you find Opium necessary to give relief from pain in this disease, or to procure sleep, the best form to use it in is the Dover's Powders. This powder quiets and relieves pain. (See Dover's Powders, for dose.)

Where the disease proves very obstinate, the Hot Sulphur Springs of Arkansas, by bathing in their waters, have been found successful in removing the complaint. In some of the most difficult cases, I have given great relief by steaming the joints, and bathing them with Hot Rum and Vinegar, as hot as could be borne. In some cases, where the patient was cold, feeble, and relaxed, Quinine, when used with prudence, has effected a cure when all other means failed.

Cold and wet are particularly to be guarded against. Flannel or woolen worn next to the skin must always be regarded as one of the chief preventives of this disease, to be proportioned in thickness to the season of the year, and to the feelings and temperature. Some, if the flannel is uncomfortable next to the skin, may wear it over the under-dress, which should be of cotton.

Persons of full habit, liable to Rheumatism, should avoid Malt Liquors generally, take animal food sparingly, and avoid violent exertions, which heat the body. Persons of spare, weak, or feeble habit, may live more freely or better, and are required to keep up the condition of the body to as good a state as possible. Where it becomes necessary to use purgative medicines, you will find Lee's Pills preferable, as they are innocent, yet useful in this complaint, being composed of Aloes; unless you are troubled with the Piles, the Aloes in any form being injurious, use Cook's Pills. Remember when the Kidneys are affected, or, in plain language, when you can not pass your water freely, the Sal Niter, or, in other words, Saltpeter, in 8 grain doses, in ½ tumbler of Water, every three hours, possesses great power in freeing the Kidneys.

Any notice of Rheumatism at the present day must be imperfect without some allusion to *Electric* and *Galvanic* agencies, Electric Belts, Shields, etc., upon the person. That these appliances are at times of

apparent service, in cases of Chronic Rheumatism, is undoubted, and we are not justified in rejecting their aid, because we can not fully explain the why and wherefore of their action. The effect of the Acupuncture Needles, in curing Muscular and Nervous Rheumatism, such as Sciatica, is sometimes almost magical; but just think what the improvements of the present age are, when, by the simple introduction of a needle into the substance of the body, it acts so as almost instantaneously to remove a most painful affection! We must, therefore, conclude by saying, that the using Electric or Galvanic appliances for the cure of Chronic Rheumatism, may be more or less useful, in a variety of cases, as they are now used extensively with many beneficial effects.

GOUT—ARTHRITIS.

GOUT is a peculiar disease, somewhat resembling Rheumatism, affecting the joints, most generally those of the foot or toes. It is sometimes distinguished by different names, according to its locality. Thus, when located in the feet, it is termed *Podagra;* when in the hands, *Chiragra;* and when it affects the knees, it is called *Gongra.* It is very painful at times, the pain differing from that of any other disease, being more excruciating and intolerable. It generally commences without any inflammation or swelling, simply pain in the joint, and a feeling as though the joint was dislocated. There may next be an enlargement of the joint, swelling without inflammation, that is without heat or redness; or it may become highly inflamed, red, hot, and swollen. The affected part becomes extremely sensitive and painful; the joint can not be moved without the extremest pain; touching the bedstead, the pressure of the lightest bed-clothes, and sometimes even noise in the room, or the walking of another person on the floor, causes pain and suffering! The disease usually attacks the joints of the feet, and most commonly those of the big toe.

There is often considerable fever attending the disease, with deficient perspiration, loss of appetite, headache, nervous irritability, and sometimes diarrhea.

Gout is supposed to be owing to an excess of what is called uric acid in the blood, caused by high living, the free use of acid and fermented liquors, and an idle or sedentary habit of living. Where the disease is in the system, exposure to cold, excesses in eating and drinking, suppressed habitual discharges, as Piles, the Menses, etc., severe exercise, violent emotions or excitement of the mind, and the like, may serve as exciting causes in bringing on an attack.

Attacks of Gout may occur at any time; frequently during the early spring months, and often periodically. The symptoms are more or less aggravated on every second or third day or night. In the acute form, an attack generally lasts two or three weeks, then terminates with free perspiration of an acid or sour smell, and copious urine, depositing a chalky and sometimes reddish sediment. The chronic form is irregular in its times of appearance, and may last for months and even years.

You may distinguish Gout from Rheumatism by the fact that it attacks the smaller joints, and nearly always those of the toes and fingers; while Rheumatism attacks the larger ones; that it begins to develop itself from within, outward, and does not shift about from place to place like Rheumatism; that it is generally preceded by attacks of Dyspepsia, which is not the case with Rheumatism, and by the peculiarity of the pain, which is of a burning, scalding, boring, and sawing nature, very different from that of Rheumatism. Gout seldom, if ever, attacks young persons, or those under middle age, while Rheumatism is mostly confined to such. Any person once having an attack of both complaints, will be at no loss to distinguish between them.

Treatment. — For temporary relief in an attack of the Gout, there is probably nothing better, if so good, as bathing or holding the part affected in cold water, for several minutes at a time, and repeating it frequently during the day. Warm Water, especially warm Lye Water, in which a quantity of Saleratus has been dissolved, is also recommended. In some cases, perhaps, it is preferable to cold applications; but in a majority of cases, bathing or immersing the part frequently in cold Water will be found to afford the most relief. In many cases, together with proper regard to diet, it will be found sufficient. A quantity of Salt may be dissolved in Water.

When the bathing does not give sufficient relief, make and apply a poultice as follows: Take a handful of Jimson Leaves, bruise and simmer awhile in weak Lye, then thicken into a poultice with either Wheat Bran or powdered Elm Bark; apply warm, and renew before it becomes dry. A poultice made of weak Lye and Bran alone is good; also Vinegar and Bran; to be applied warm.

The main thing, in order to effect a cure, is a change of diet, with plenty of exercise, even to hard labor, if practicable — the harder the better. Spirits, Wine, and fermented Liquors are to be avoided, except where necessarily connected with the medicine to be taken. Also Meats, and stimulating or strong Food.

An active cathartic should be taken, such as the powdered May apple Root and Cream of Tartar, 1 tea-spoonful of each, or a dose of Podophyllin, 3 grains, with the Cream of Tartar; or any other good Vegetable Physic. After that has operated, procure 2 ounces, each, of Wine of Colchicum and Liquor Potossa — which you can obtain at

a drug store — mix, and take 1 tea-spoonful three or four times a day Or the Tincture of Black Cohosh and Wine or Tincture of Colchicum, equal parts, may be used in the same way, adding 1 dram of Iodide of Potassa to 4 ounces of the liquid.

The bowels are to be kept loose and regular by the occasional use of cathartics, and a rigid adherence to a low diet observed throughout.

WHITE SWELLING AND HIP DISEASE.

WHITE SWELLING most generally appears in the knee-joint, though it may, and sometimes does, attack other joints, as those of the hip, ankle, and elbow. It commences with slight pain in or around the joint, which gradually increases, with swelling or enlargement and hardening of the part. It is called White Swelling, because the skin does not, like in other swellings and inflammations, turn red, but remains either of a natural color, or, as is frequently the case, assumes a shining whiteness, as the swelling advances. The pain seems to be deep-seated, and though it may be but slight when the limb is in a state of rest, yet on moving the joint becomes almost intolerable. The part around the joint becomes hard and callous, the swelling increases, until, finally, if not checked, matter forms and discharges begin, perhaps, from several openings. The disease being seated in the periosteum, or covering of the bone, that is apt also to become diseased, so that not unfrequently crumbling and wasting away of the bone takes place. When the disease is seated in the hip, the joint or socket is apt to fill up with osseous or bony matter, so as gradually to dislocate or displace the head of the femur or thigh-bone.

When openings and ulceration take place, fleshy excrescences are apt to protrude through the openings or ulcers, and often small pieces of exfoliated or detached bone pass out. The flesh wastes away above and below the joint; the joint is likely to become permanently stiff, perhaps dislocated; the patient becomes thin, pale, emaciated, with Hectic Fever, Night Sweats, and great constitutional debility.

White Swelling occurs mostly in persons of a scrofulous habit or taint, to which it is undoubtedly owing, and affects children much oftener than adults.

Treatment. — When the disease is taken in its early stage, or commencement, it can generally be scattered or cured, without allowing it to gather and break. But to do this, efficient measures must be adopted and thoroughly pursued. If in the knee-joint, steam it

once or twice a day over hot, bitter herbs, as Hops, Tansy, Catnip, Smartweed, Mayweed, Pennyroyal, and the like. Boil the herbs awhile in a large pot or vessel, then empty into a tub or bucket, place the joint over it and cover with a blanket; and to increase the steam, drop in occasionally a hot stone; steam for twenty or thirty minutes at a time. Then use the following Liniment: Take Alcohol, 1 pint, into which put 1 ounce of Gum Camphor, and when dissolved add 1 ounce, each, of Oil Hemlock, Oil Sassafras, Aqua Ammonia, and Laudanum, and bathe the part well with this three times a day, and apply a poultice made of Wheat Bran, Vinegar, and strong Lye, with a spoonful or two of Salt dissolved in it. The part should be fomented over the hot bitter herbs at least every night; after which use the Liniment and apply the Poultice. If the disease is in the hip-joint, so that you can not steam the part as directed, apply a fomentation of the herbs, as hot as can be borne, and bind it on.

To prevent stiffness of the joint, use a Liniment composed of Neat's-foot Oil, 4 ounces; Oil Sassafras, Oil Turpentine, Wormwood, and Gum Camphor, powdered, of each, ½ ounce. Also a Liniment composed mainly of Angle Worms, for preparation of which see Liniment for Stiff Joints among "Medical Compounds."

If the disease progresses, gathers, and breaks, poultices of Elm, and others of an emollient nature are to be used, together with Salves. In case of proud flesh, or fungous excrescences, sprinkle on a little burnt Alum, or vegetable Caustic and pulverized Blood Root, or Charcoal and Sulphate of Zinc; or wash and syringe out the opening with a solution of vegetable Caustic.

As the disease is dependent upon a scrofulous diathesis, or other taint in the system, internal treatment will be of the utmost importance. The bowels are to be kept loose by an occasional dose of Podophyllin, or other vegetable purgative, and the patient should take the Alterative or Scrofulous Syrup (see preparation of these articles among "Medical Compounds"), in doses proportioned to age, three times a day, to each pint of which one dram of Iodide of Potassa should be added. A child ten years of age may take a table-spoonful of the syrup at a dose. Sponging or bathing the body once a day in Salt Water will be found of service.

Tonics will also be necessary, especially if the patient should suffer much from the disease, and become enfeebled and emaciated. For this purpose take 30 grains of Quinine, dissolved in 1 ounce of water, 20 drops of Sulphuric Acid, and add ½ pint of Port Wine. Dose: from one to two table-spoonfuls, according to age, may be taken two or three times a day. Or bitters composed of Golden Seal, Gentian, Colombo, Chamomile Flowers, and Peruvian Bark, ½ ounce of each to a pint of Port Wine or Spirits, may be used in the same doses.

A celebrated and very successful "domestic" treatment for White Swelling, long kept a secret, consisted of the following: Steam the part once a day over a hot decoction of Bitter Herbs; anoint the part and rub well with a liniment composed of the Marrow of two or three hogs' jaws, ½ ounce of Gum Camphor, ½ ounce of Laudanum, and about ½ pint of Alcohol or good Whisky, simmered together for a

few minutes, and to be applied morning and evening. After which apply a poultice, composed of a handful each of the hearts of Mullen and Catnip Herb, bruised and boiled in sweet Milk, and thickened with a little Wheat Flour. In case the swelling gathers and breaks, use a salve made of a handful each of Red Clover and Bittersweet Berries (or bark of the root), a lump of Rosin as large as a hulled walnut, and ½ pound of Mutton Tallow — to be stewed over a slow fire for an hour or two, and then strain and press out. Apply to the openings or ulcers a little powder, composed of equal parts of Red Precipitate, Loaf Sugar, and Charcoal, all powdered and mixed together.

For contracted sinews and stiffness of the joint, put a handful of Chamomile Flowers into a glass bottle, cover them with Sweet Oil, and place in the sun for a few days. Anoint well with this two or three times a day, and drive it in with a hot smoothing-iron, or by means of heat applied to the part.

RICKETS, OR CURVATURE OF THE SPINE.

THIS is a peculiar disease, seated principally in the bones, called sometimes Disease of the Spine, and is owing to a deficiency of earthy deposit in the formation and growth of the bones. It usually occurs in children of a scrofulous constitution. Owing to the soft condition of the bones, they are often not able to support the body, and more or less deformity will occur. It may be only a slight curvature in the bones of the legs or in the backbone ; but in bad cases, the deformity is sometimes so great as to change the whole figure and appearance of the person ; the head becomes enlarged ; the ribs too straight or too much curved ; the breast-bone rises or projects outward, and the spine or backbone will have two or three curves, shortening the body to nearly one-half its proper length, and otherwise distorting its general appearance. The abdomen is sometimes greatly enlarged. The skin and flesh become flabby, the body wastes away, and the teeth become loose and drop out.

Treatment.— This disease is to be treated in the main as a case of Scrofula. If it is neglected long, it will be difficult or impossible to prevent deformity ; but if proper treatment is commenced early, this may be prevented.

The patient should be bathed or washed twice a day with Salt and Water, and rubbed well, commencing with the water slightly warm, gradually using colder each day, till it may be used quite cold. Stimulating liniments should be applied to the spine and the joints, once or twice a day, such as Linseed Oil, Oil Sassafras, Oil Hemlock, Tincture Cayenne, and Gum Camphor, of each 1 ounce, or equal parts.

It is also well to bathe the surface occasionally with astringent tonics, as a decoction of White Oak and Dogwood Bark.

The patient must also take some good alterative and anti-scrofulous remedy, such as a decoction or syrup made of the following: Yellow-dock Root, 1 pound; Bittersweet, bark of root, and Yellow Parilla Root, of each, ½ a pound; Blue Flag Root, ¼ of a pound, and Blood Root, 2 ounces; boil in 2 gallons of water down to 2 quarts; strain; while hot, add 3 pounds of White Sugar; when cold add 1 ounce of Oil of Winter-green; put in ½ a pint of Alcohol. Give of this from a table-spoonful to ½ a wine-glassful three times a day, according to the age of the patient. If less than two years old, a tea-spoonful will do for a dose.

The patient should take frequent exercise in the open air; wear loose clothes; use a nutritious diet; and, what is very important, be made to carry something heavy on the head several times every day, if nothing but a block of wood or a stone. This is calculated to give exercise and action to the muscles of the back, and to the spine itself, and will, if continued, in a majority of cases prevent curvature of the spine, and in many cases, where the curvature is but slight, will counteract and cure it.

DROPSY.

SOME authors and doctors suppose that the science of medicine consists in the multiplication of technical terms, and enumerate many species of Dropsy, according to the part of the body in which the effusion occurs. I have always endeavored to be plain and explicit, so that my readers can at once comprehend my meaning. When this disease takes place in the cellular membrane, which is immediately beneath the skin, it is termed Anasarca; when in the cavity of the belly, Ascites; when in the chest, Hydrothorax; but all such collections fall under the general denomination of Dropsy, and when produced by debility, require the same method of treatment. The symptoms of Anasarca are: a uniform pale and often shining distension of the skin, most generally of the legs, at first soft, and readily receiving the pressure of the finger. The swelling, after a horizontal or reclining position for some hours, is much diminished, and the face becomes swelled. It gradually extends itself upward, till it occupies the thigh and trunk of the body, and not unfrequently the head, attended with great scarcity of urine, which is always high colored. When this disease occupies the belly, the enlargement begins at the bottom, gradually increasing upward, attended with a sense of weight; and the patient feels a sense of fluctuation or mov-

ing of the water on a sudden motion of the body. As the enlargement increases, the breathing becomes more difficult, and the cellular substance, or veins of the legs become distended. When the effusion is in the cavity of the chest, there is always, more or less, a sense of anxiety about the heart; a great difficulty of breathing, which is increased by lying down; a dry cough; palpitation of the heart; paleness of the face; and when far advanced, the legs swell, and a fluctuation or movement is felt by the patient on any sudden shake of the body.

Dropsy of the Chest and of the Heart show themselves by an intermission of the pulse; shortness of breath; when any active exercise is taken, particularly in ascending a pair of stairs or a hill, there is an increased action of the heart; and paleness of the face and skin. On going to sleep at night, a feeling of suffocation is felt, so as often to compel the person to rise up immediately in bed. The noise or motion of water can often be heard distinctly in the chest, by placing the ear upon the heart, when the person turns from one side to the other. Numbness of one or both arms is frequently felt in Dropsy of the Chest. A Dropsy of the Chest sometimes exists alone; and not unfrequently it will constitute a part of a general disease. The most common attack of this disease is the Dropsy of the Abdomen, or Belly, medically called Ascites, which is easily distinguished by a sense of weight or swelling of the belly, with a gradual accumulation or increase of water; the weight being felt on the side on which the patient generally lies.

Dropsy is generally the effect of other diseases, such as diseases of the Liver, Fever and Ague, Dysentery, Bleeding from the Lungs, Uterus, or Womb, Inflammations, Rheumatism, Gout, and all complaints which greatly debilitate the system. It often arises from pressure upon the blood-vessels, as in Pregnancy, Aneurisms, and Tumors. It is especially produced by intemperance in the use of spirituous liquors; for drunkenness more frequently produces the Dropsy than any other cause. Ossification of the valves of the heart will produce a Dropsy of that organ, and eventually of the whole chest. The Bowel Complaint of children will often produce Dropsy of the Brain. The Scarlet Fever has likewise produced Dropsy in various parts of the body. And in females, the *uterus*, or womb, is often the seat of this disease, which is formed into little bladders of water, medically called Hydatids. From experience, it is very probable that most Dropsies arise from some derangement of the digestive organs, or of the chylopoetic system (in plain language, that system of vessels which forms the blood), which produces an

effusion of serum in various parts of the body, caused by some general or local weakness, or obstruction.

Treatment. — The great and important object in the cure of this disease, is the removal of the collected water, and the restoration of the tone of the system, bearing in mind that Temperance and Exercise are of the greatest importance in the prevention and cure of this disease. Indeed nothing promotes a free and lively circulation of the blood, so much as Exercise; it assists the vital powers both in moving the blood, and in hastening the secretions and excretions. The perspiration, especially, is always increased by it; and this increase of the perspiration diminishes the accumulation of water in the Dropsical part. This is the reason why Friction, or rubbing the Dropsical parts briskly, or even the whole body with a brush, quickens the circulation of the blood, and causes an absorption of the water. As regards the diet, the food should be light and nourishing, and the drink nothing but Water, Black Tea, and such drinks as act upon the kidneys, medically called Diuretics, which are medicines or drinks that increase the flow of urine. For this purpose you will find the Dandelion, as a tea, to be a most valuable domestic remedy, perfectly safe, and procurable in almost every field. It is known in the country by the common name of Piss-a-bed; and when it is freely used, its diuretic properties are very valuable. It rarely fails to increase the flow of urine very considerably. Various preparations, extracts, etc., of Dandelion, are recommended, and may be purchased at every drug store; but I prefer the fresh root, which is undoubtedly the most efficient. The best mode of administration, is to wash the root, slice up a good double handful, say from two to three ounces, and pour boiling water upon it, then allow it to draw for an hour or two beside the fire, but not boil. This infusion, or tea, will have a greenish brown color, and two or three cupfuls, more or less, should be taken during the day, until the desired effect is produced. The taste is not very unpleasant; it is slightly bitter, but may be improved by the addition of a little Orange-peel. In addition to its action in increasing the flow of urine, Dandelion improves the tone of the digestive organs, and most certainly exerts a stimulant action upon the liver. In disorders of the digestive organs, accompanied by deficient action of the kidneys, the urine being deficient, high colored, and depositing a pink sediment, the Dandelion will produce the most beneficial influence; or it may be advantageously combined with the common herb called Broom, which is one of our most valuable medicinal plants, and one far too much neglected, as though its virtues were not sufficiently known; it is perfectly safe, and a great diuretic. The infusion is best made from the green tops; a good handful—about an ounce—to a pint of water, or more; which should be poured upon it boiling, and the whole allowed to stand in a covered vessel near a fire for some hours. Of this a tea-cupful may be given twice a day, in all cases in which it is desirable to increase the flow of urine. It rarely fails. A few Juniper Berries may be added to the infusion. In cases of Liver affection,

the substitution of half Dandelion Root for one-half Broom, is a valuable combination. The seeds may be used when the tops can not be procured.

Large and frequent doses of purgative medicines are important, and very useful, in this complaint. They should be frequently used, with such medicines as act upon the kidneys; for this purpose, use Salts, Cream of Tartar, and other purgatives which drain the bowels of water. The Calcined Magnesia operates upon the kidneys by its alkaline qualities, and upon the bowels as a purgative, and should always be used where other remedies fail. I consider it as one of the very best remedies in this complaint. The Iodide of Potash, in doses of five or six grains, once in three or four hours, is a late and valuable discovery in Dropsy. Sweet Spirits of Niter, Fir Top, Gin, Juniper, Parsley, Saltpeter, Potash, Soda, Squill, and Turpentine, are all used as diuretics in this disease. As there is, however, always some degree of uncertainty in the action of diuretic medicines, some answering well in one case, and not at all in others, owing, in most instances, to the peculiar state of the constitution, or the nature of the disease; it is, therefore, most advisable to try these various remedies until found successful. I have found, in my practice, the Dandelion and Broom, generally, the most certain domestic remedies, and at the same time perfectly safe. It sometimes happens that diuretics which would not act before, act after the administration of an active purgative; but if the patient is of a weak habit of body, the bowels should be kept simply open by the use of Salts, Cream of Tartar, etc., as before mentioned. Jalap, as a purgative, see Table for dose, is considered a valuable remedy in this complaint; but from a long experience in my profession, I feel convinced that the vegetable kingdom furnishes many roots and herbs better adapted to the cure of this disease. As an evidence of this, Mr. Lynn, of the Irvin Institute, has addressed a letter to the *Christian Advocate*, stating the way in which his wife was cured of Dropsy, after the physicians in the town in which he resided, and two eminent physicians of New York, relinquished the hope of her ever getting rid of it. "We had," says Mr. Lynn, "used a great variety of remedies prescribed by our physicians, without benefit, and finally submitted to the operation of tapping, under the direction of Dr. Palmer, when three gallons of water were drawn away in about five minutes. This afforded immediate relief; but the water collected again, and in about three weeks, the bloat, or enlargement, was nearly as great as before. She was advised by a friend, who had suffered by this disease, to use the Indian Hemp, medically called *Apocynum Cannabinum*. She commenced drinking a decoction of this vegetable medicine, which proved very beneficial in checking the progress of the irregular secretion of water, and greatly improved her general health. Just at this time, an acquaintance sent us word from New York, to use the Vapor Bath, which she had known to be efficacious in some desperate Dropsical cases in England. I had a convenient apparatus made, and commenced the use of it twice a day, fifteen or twenty minutes each time; and in combination with this valuable remedy, she used the

Indian Hemp. In about two weeks, there was an apparent improvement of general health and strength ; in two months more, the Dropsical affection had entirely disappeared ; and her general health is decidedly better than it has been for some years." For a full description of this most valuable medicinal plant, see Apocynum, or Indian Hemp, in the "Medical Flora," page 863. As many persons may not understand the method of preparing the Vapor Bath, so many different forms having been invented for this application of steam, I will describe a simple one. The most convenient form is to place a kettle of water on the fire, with a tube to convey the steam underneath a blanket with which the person is covered all but the head, so as to let in the hot steam and produce a perspiration or sweat, regulating the temperature of the bath, so as not to produce too great a determination of blood to the head. From fifteen to twenty or twenty-five minutes, will be generally sufficient ; and must be regulated somewhat by the effect or sensation experienced by the patient. The object to be attained is a free perspiration. Another simple Vapor Bath may be made by placing a vessel of boiling water underneath the blanket or cloth in which the person is closely covered, all but the head, and keeping up the steam by means of hot stones or any hot metal ; another, by wrapping him in a blanket wrung out of hot water, and covered with several dry blankets to prevent the evaporation.

The discoveries of each succeeding day convince us of the importance of attending more strictly to the various herbs, roots, barks, leaves, etc., of the vegetable kingdom ; for I am fully convinced of their being essential in the cure of many diseases in which other medicines have failed. A wise and beneficent Creator has given to every herb and leaf medicinal virtues ; He has made nothing in vain ; the most uninviting and noxious weeds frequently give relief in almost hopeless cases — those which have baffled the profound skill and most powerful energies of genius. A case of this kind occurred in Louisville, Kentucky, a few years since. A lady of wealth, Mrs. L , distinguished for her charities, and commanding the regard and affection of all who knew her, was afflicted with this disease — Dropsy, or Ascites. She was attended by some of the most distinguished physicians of that city : Dr. Richardson, her family physician, Professors Gross, Cochran, Rodgers, and Knight, with the consultation of many other professional gentlemen, who pronounced her case incurable. She had been tapped six or seven times, and the enormous quantity of thirty gallons of water drawn from the abdomen or belly ; the last operation drawing off nearly six gallons. In this dangerous and critical situation, I was called in to see her. It was with great difficulty, from the quantity of water secreted in the abdomen or belly, that she could be moved ; indeed, the slightest motion of the body produced great distress and almost suffocation. The discovery of a new and, though a simple one, a powerful remedy in curing this disease, induced me to undertake her case. I thank God that I have it in my power to divulge this method of cure, which may be the means of restoring hundreds, perhaps thousands, to health and

vigor, and aid in arresting the progress of this most distressing and too often fatal disease.

The remedy for this complaint, though apparently a simple one, has produced some surprising and unexpected cures. Take the bark of the common Grape-vine, and burn it to ashes, stirring it occasionally until thoroughly burnt. The dose is a tea-spoonful to half a table-spoonful in a wine-glass or more of Catawba Wine, three times a day, increasing or diminishing the dose and Wine as it can be borne on the stomach. The bowels to be kept open by Salts or compound powder of Jalap, Elaterium, or some mild purgative, or actively purged, according as the patient is of a weak or strong habit of body; the Jalap evacuates the water copiously, by reducing the swelling of the belly; it should be given two or three times a week. The Vapor Bath, as before described, was used once or twice a day, as its administration could be borne in the treatment of her case. I am now forcibly impressed with the opinion that a judicious course of this kind of treatment will constitute the very best in Dropsical diseases. I should recommend the food to be nourishing, digestible animal food, with gentle stimulants, Porter, Ale, etc. All drinks should be taken cold, in small quantities, and frequently repeated. Cider and Gin are good for many persons; but this is greatly dependent on former habits, and the constitution of the patients.

In two months from the commencement of this treatment, Mrs. L. was reduced to her natural size, and restored, through the blessing of God, to *perfect health*. When she attended the First Presbyterian Church, she excited great astonishment at her unexpected recovery. As it was important that great care should be taken to prevent a return of the disease, I prescribed tonics to restore the general system, and advised her to visit the Sulphur Springs of Virginia; for all waters that contain Sulphur or Iron will prove beneficial in improving and restoring the general health, as they operate directly upon the kidneys, increase the flow of the urine, and give new activity to these important glands. She returned from the Springs in fine health, was married to a most amiable and worthy gentleman, and lived for many years in the social enjoyment and happiness of her amiable family and friends.

The following is an excellent remedy in Dropsy: Take of Juniper Berries, Mustard Seed, Ginger Root, each (bruised) 1 ounce; of Horse-radish, Parsley Root, each (bruised) 2 ounces; hard Cider 1 quart. Dose: a wine-glassful, four times a day, gradually increasing the quantity.

The following remedy, a late discovery in this complaint, is highly recommended: Take of Mustard, ½ ounce; Juniper Berries, 1 ounce; Milkweed Root, 1 ounce; Horse-radish Root, 1 ounce; Black Alder Bark, 1 ounce; Mandrake Root, 1 ounce; Dwarf Elder Root or Bark, 1 ounce; Bittersweet Bark, from the root, 1 ounce. Bruise all together, and add one gallon of hard Cider. One wine-glassful to be taken three or four times a day, on an empty stomach. In some cases, where the patient is hard to purge, the best medicine is Elaterium, or Wild Cucumber. It operates powerfully in small doses,

(from 2 to 4 table-spoonfuls,) of the infusion or tea, repeated daily, as the strength of the patient will bear it; it usually vomits and purges. Of the Elaterium, two grains are a dose. This medicine has caused the urine to be evacuated to the amount of a gallon every day, and soon reduced the person to the usual size. It should be used with great care, being a powerful and valuable remedy.

The common Rag Weed, medically called *Ambrosia Elatior*, is a recent remedy, and highly recommended in the form of both infusion and extract; it has been given in one case, when the patient was so far gone as to have the appearance of being able to survive but a few hours longer. By this simple remedy the water was immediately evacuated; all the symptoms subsided, and she was soon convalescent. The best method of giving it is as follows: Make a strong decoction of the plant, and to every ½ pint of the infusion, add a table-spoonful of the infusion of Digitalis, or Fox-glove, to be given according to the urgency of the symptoms; as a general rule, 4 or 5 tumbler-fuls in the course of the day.

The following pill has seldom failed in affording relief in Ascites and other forms of Dropsy: Take Compound Powder of Colocynth, 3 grains; Croton Tiglium, 4 drops; mix, and form into three grain pills. Give one pill every six hours, until it produces copious or large evacuations. Repeat when the water accumulates. Take also a tea-spoonful, several times a day, of a strong decoction of Digitalis. The above pill, with the other means I have before mentioned, has had an extraordinary effect in some of the very worst cases. It may be necessary to administer some strong tonic, to sustain the strength of the patient, while such large quantities of water or serum are evacuated.

There is another simple, yet valuable remedy in this disease, which has cured many cases of Dropsy. It is made by boiling three handfuls of the inner bark of Elder in a quart of milk and water to 1 pint; half of which is to be taken morning and night, every day, until cured.

Having thus given you such of the late and valuable discoveries as my experience has proved must successful in many apparently desperate cases, I shall conclude my remarks on this important subject, by the following directions as to the regimen: Stimulating diet is required in every species of Dropsy. Mustard, Horse-radish, Red Pepper, etc., may be freely taken with food; and Porter, Ale, Wine, Gin, together with such articles as may agree with the patient, and restore the tone of the system. Great care and attention, therefore, should be paid to the various remedies mentioned, which will enable the judicious prescriber to select such articles to evacuate the water and prevent its accumulation, as many on trial prove best. To accomplish this object I know of no better preparation than the Compound Powder of Jalap. This purgative evacuates the water very copiously, lessening the tension and swelling of the abdomen or belly. Let it be repeated two or three times a week. It generally has the most immediate and beneficial effect.

The next preparation to be given will be the following: Take

Queen-of-the-Meadow (medically called Spirea Ulmaria), 1 ounce, Milk Weed (Asclepias Syria), 2 ounces; Juniper Berries (Bac. Junip.), 2 ounces; Horse-radish Root (Coch. Armoracia), 1 ounce; White Mustard Seed (Sinapis Alba), ½ ounce; Prickly-Ash Bark (Xanthox. Fraxin.), 2 ounces; bruise all these articles separately; then mix. To the powder add 1 gallon of good Cider. Give a wine-glassful four or five times a day, or as much and as often as the stomach will bear. This will stimulate the kidneys, and promote a free discharge of urine. This medicine should be continued daily, if it agrees with the patient. The purgative may be repeated according to the strength of the system.

DISEASES OF THE SENSES.

INFLAMMATION OF THE EAR—EAR-ACHE.

INFLAMMATION OF THE EAR, producing what is commonly known as "Ear-ache," is principally seated in the nerves and membranes of the ear, and is usually brought on by exposing the head to cold, or to a current of air. It may be caused, however, by any exposure, such as getting the feet wet, check of perspiration, or cutting the hair too short in cold weather.

Treatment.—Bathe the feet in warm water, and drop into the ear a liquid made as follows: Take equal parts of Laudanum, Sweet Oil, and Honey; one part Tincture Cayenne, or No. 6, may also be added, mix, and from a warm tea-spoon drop into the ear five or six drops, and stop the ear tight with cotton. Repeat every hour or two.

If the pain is very great, steam the ear and side of the head over Bitter Herbs, and apply a Hop fomentation, or a poultice made of roasted Onions. Give also an active purgative.

An excellent remedy for Ear-ache is: Take three or four roasted Garlics, and, while hot, mash; add a table-spoonful of Sweet Oil, and as much Honey and Laudanum; press out the juice and drop it into the ear, warm, occasionally. Onion-juice is also good, in place of the Garlic. If matter forms in the ear—if it gathers and breaks—inject warm Castile Soapsuds, and cleansing and healing washes, into the ear, by means of a small syringe, and apply poultices.

DISEASES OF THE EAR.—It is interesting to note that the ear of humanity is subject to no less than twenty-one diseases. *Four* are of the auricle or outer projecting part; *six* are of the opening leading from the external orifice down to the drum; *three* of the drum itself; *one* of the Eustachian tube; *three* are of the cavity of the middle ear, and *four* of the internal ear.

INFLAMMATORY SORE EYES.

THIS affection is so well known that it needs no description. It is sometimes caused by foreign bodies getting into the eyes, or by what are called "wild hairs," which grow through the eyelids. In such cases the offending cause must be removed.

Treatment.—Where it is caused from cold settling in the eyes, determination of blood to the parts, etc., make use of measures to equalize the heat and circulation of the body, and to withdraw the determination of blood from the head. Apply poultices and eye-washes to allay inflammation. It will invariably be found, in acute Ophthalmia or Inflammation of the Eyes, that the head or forehead is too hot, and the feet and extremities too cold, showing an unequal circulation. Hence the feet should often be bathed in warm water, and cooling applications may be applied to the head.

Apply to the eyes a poultice made of Pulverized Elm Bark, stirred in Warm Milk and Water. This is the best poultice that can be used. The Wilted Leaves of Stramonium (Jimson) are also good, in severe cases, to apply over the eyes.

Use the following cooling Eye-water: Take Sugar of Lead, and Sulphate of Zinc, of each ½ dram; Common Salt and Loaf Sugar, of each, 1 dram, or a tea-spoonful; Rain Water, ½ pint; let stand two days, shaking occasionally; then strain or filter through white flannel, when it is ready for use. Wash the eyes with this two or three times a day. An excellent Eye-water is also made by steeping ½ ounce, each, of good Green Tea and Yellow Root (Hydrastus Canadensis), in 1 pint of Boiling Rain Water; then add 1 dram of Sulphate of Zinc; when cold, strain through white flannel.

Give an active purgative, which should be repeated every two or three days. Continue the wash through the day, and the poultices at night.

Chronic Sore Eyes.—Where Inflammation of the Eyes has been neglected, or has existed for a long time and become chronic, it will be well to give a cathartic once or twice a week, and apply to the edges and internal surface of the eye-lids the following ointment: Take Fresh (unsalted) Butter, 2 ounces; White Wax, 2 drams; melt these together in a saucer or earthen vessel (but do not make very hot), and when nearly cold, stir ½ dram each of Red Precipitate and finely Pulverized Sulphate of Zinc, and incorporate or mix well. Apply twice a day. Either of the Eye-waters above named may also be used, and occasionally at night, an Elm Poultice, if much inflamed.

The following is also an excellent remedy in Chronic Sore Eyes: Dissolve ½ ounce of Gum Camphor in 2 ounces of pure Turkey Oil; a few drops of Alcohol must first be poured on the Camphor to make it pulverize, then (when pulverized in a mortar) add the oil, and rub in the mortar till dissolved. Anoint with this preparation, two or three times a day.

Scrofulous Sore Eyes.—Chronic Sore Eyes is often owing to a scrofulous condition of the system. In such cases only the lids will be affected; the edges very red, sometimes turned out, and may be ulcerated. If the affection is owing to a Scrofulous Diathesis, as it is called, the following syrup should be used: Take of Yellow Parilla Root, 2 pounds; Burdock and Yellow-dock Root, each, 1 pound; Bark of the Root of Bittersweet and Sassafras, each, ½ pound; Mayapple and Blood Root, each, about 2 ounces; bruise, and boil the whole in 5 or 6 gallons of water, down to 1 gallon; add, while hot, 6 pounds of White Sugar; strain, and bottle for use. To each pint, add ½ dram of Hydriodate of Potash, dissolved in 1 or 2 ounces of water, and take 1 wine-glassful three times a day. It will be apt to keep the bowels loose, and will act as a powerful alterative and cleansing medicine to the whole system.

Eye Diseases.—A story is told of a Quaker who saw a stranger drinking brandy at a country inn, and who, also, was wearing goggles for protecting his sore eyes. He said, "Friend, put thy goggles on thy mouth, and the brandy on thy eyes, and they will soon be well."

The eyes often appear suspicious and indicate a want of care and circumspection. Keep your eyes as near right as you can. They are subject to some seventy-five different diseases.

DISEASES OF THE HEAD.

INFLAMMATION OF THE BRAIN.

Inflammation of the Brain is of two kinds; that which affects the substance of the brain itself, and that which is located in the membranes only. It is often symptomatic of other diseases, as Fevers, Eruptive diseases, and sudden Constipation of the Bowels.

Causes.—Whatever produces a great determination of blood to the head may cause Inflammation of the Brain, or of its membranes; as fits of passion, intense study, intemperate use of ardent spirits, and exposure to great heat of the sun. Fractures of the skull, blows upon the head, suppressed evacuations, and the repulsion of cutaneous diseases, may also produce it.

Symptoms.—Inflammation of the Brain is generally attended with flushed face, redness of the eyes, pain in the head, wakefulness, intolerance of light and sound, and more or less inflammatory fever. If the substance of the brain is affected, there will also be delirium. There is also apt to be pain in the stomach, which arises from sympathy. The head is usually hot, the feet cold, and the bowels generally costive. The disease may prove fatal in a few days, or it may continue for months. Sometimes the patient becomes quite delirious, and raves in a state of complete phrensy.

Treatment. — Efforts should be made to restore the blood to the extremities, and thus divert it from the brain. Bathe the feet in the warm Alkaline Bath, made by adding a little Saleratus, or Lye, or Ashes, to warm water. This should be done two or three times a day. Make cold applications to the head, face, and neck — keep the head cool, as well as you can, and give a brisk, active Cathartic, of the hydragogue kind, by which is meant purgative medicines that produce watery discharges from the bowels. There is nothing better for this than the Powdered Mandrake Root and Cream of Tartar, with a little Cayenne or Cloves. Give of the combined powder 1 tea-spoonful every hour, till it operates. Jalap and Cream of Tartar will do it, if you cannot get the Mandrake. The Cathartic should be repeated every morning or evening, till the patient gives evidence of being out of immediate danger.

Apply a Mustard Draft to the back of the neck, and a large one also over the stomach and abdomen.

Some Sweating Powders or Tincture should be given, to keep up a determination to the surface, and promote general perspiration. For this purpose, use the Tinctures of Lobelia and Blood Root, and the Wine of Ipecac, in equal parts, to be given in tea-spoonful doses about once an hour. Or these three articles may be given in powder, in 6 to 10 grain doses every hour.

At night, apply Mustard Drafts to the feet and legs. If there is great pain in the head, and the cold applications do not relieve it, apply a warm fomentation made of Hops simmered in Vinegar, inclosed in a thin muslin, and repeat occasionally. Should the patient be very restless, and unable to sleep, let him drink freely of Hop-tea at night.

Cupping or Leeching may be advisable; it will have a tendency to relieve the vessels of the head, and produce a sort of counter-irritation that may be beneficial.

The patient may be allowed to drink Lemonade, water made acid with Cream of Tartar, and also Spearmint Tea, with a little sweet Spirits of Niter in it. The latter will act as a diuretic, which will prove of much advantage. The Podophyllin, in 3 grain doses, with 1 tea-spoonful of Cream of Tartar, is an admirable purgative in this disease.

APOPLEXY.

APOPLEXY is a disease characterized by a sudden loss of feeling, consciousness, and the power of voluntary motion. Its immediate cause is internal pressure upon the brain, from congestion or effusion. It is most usually produced by a rush of blood to the head. It generally attacks elderly or middle-aged persons, and seldom occurs in early life.

Symptoms.—The disease is sometimes preceded by certain premonitory symptoms, such as fullness and weight in the head, dimness of sight, roaring in the ears, confusion of ideas, numbness in some portion of the body, and other evidences of slight or partial Palsy. But cases sometimes occur without any warning, even in the midst of apparent good health.

When a person is attacked, he suddenly falls, losing for the time his sight, hearing, feeling, and power of motion, while the action of the heart and lungs still continue. The veins of the face and neck become turgid with blood; the arteries throb; pulse full, strong, and slow; the breathing is also slow, and the powers of swallowing much impaired, or entirely lost. This condition may continue for a few minutes only, or for several hours — when, if not fatal, it slowly yields to the power of nature, or the effect of remedies. The patient may entirely recover from the effects of the disease, but it is very often the case that partial Palsy will remain for a long time, and it may become permanent. The mind is often more or less permanently injured, and Inflammation of the Brain may also result as a consequence.

Persons usually recover from the first attack, and may possibly from the second; but the third, of the severe form, generally proves fatal. Profound coma or stupor, small and quivering pulse, cold extremities, cold sweat on the skin, with increasing intervals between breathing, are to be regarded as fatal symptoms.

Causes.—In some persons there is a hereditary predisposition to Apoplexy. It is also said that persons with a certain formation of body, as a full, plethoric habit, low stature, broad shoulders, and short, thick neck, are predisposed to the disease. It occurs, however, in persons of an opposite formation of body.

A predisposition to the disease is also acquired by certain habits of life, such as high living, habitual intoxication, sedentary pursuits, over indulgence in sleep, and long continued mental exertion. Among the exciting causes may be named, distension of the stomach by a full meal, immoderate use of ardent spirits, violent exercise, severe fits of coughing, stooping to blow the fire, and violent passion.

Treatment.— The first thing to be done in a case of Apoplexy, is to equalize the circulation, thus withdrawing the pressure of blood from the brain, and then take measures to prevent a determination of it to that organ again.

Prompt and energetic means are to be employed. Place the patient in an easy position, with the head elevated. Remove every thing from the neck that might prevent the free return of blood from the head. Apply cold water freely to the head and face, and as soon as possible place the feet and legs in hot water. Strip the patient, rub

the feet and legs, gradually extending the rubbing up over the body and arms, applying warm water, to which has been added some Cayenne or Powdered Mustard. This will produce a warmth to the extremities and a free action in the capillary vessels, which will invite the blood to those parts and withdraw it from the brain.

At the same time, if convenient, and the attack seems to be a severe one, preparations should be made to put the patient in a Warm Bath, sufficiently large to contain the whole body, as high as the arms or shoulders. If the first process does not succeed in restoring consciousness in half an hour, he should be returned to the bath for another half hour, or until relief is obtained, be it long or short. Keep the head cool all the while.

As soon as the patient has been restored to consciousness and relieved of the urgent symptoms, he should be placed in bed, with the head and shoulders somewhat elevated, and hot bricks or stones placed about his legs and body. As soon as he can swallow, a brisk, active purgative should be given. For this purpose there is nothing better than the Anti-bilious Physic (see table of Family Medicines), or two parts of pulverized Senna and one of Jalap. Take of this compound a heaping tea-spoonful, and as much Cream of Tartar, mix in a little Warm Water, and give at one dose. It will be well to add a little Cayenne to make it act quicker. If it does not operate in an hour, repeat the dose.

As the bowels are generally constipated in this disease, it would be well to aid the operation by giving an injection, composed of a spoonful of the same physic in a pint of Warm Water, a large spoonful or two of melted Lard or Sweet Oil, and a little Salt or Cayenne. A large Mustard Plaster should be applied over the region of the stomach. This will have a tendency to prevent Inflammation of the Brain. Diaphoretic or Sweating Medicines should also be given, such as a tea of the Composition Powder, Pennyroyal, Catnip, and the like. There is no better way to equalize the circulation than to produce a free and general circulation.

Do not bleed. The lancet never cured a case of Apoplexy. It may afford temporary relief, but it will oftener hasten a fatal termination. Give no Opium — it will only aggravate the disease. During convalescence, the purgatives should be repeated every few days, for a week or two.

After recovery, be careful in the diet and habits. Avoid all strong, highly-seasoned Victuals, Wines, and Liquors of every kind. Use mainly a spare Vegetable diet. Make use of frequent bathings, with friction and moderate exercise in the open air. Keep the feet warm. Avoid fatigue of both body and mind, and in all things observe strict temperance.

ATROPHY OF THE BRAIN

IS the more common form of brain disease; it arises in persons of inactive and mere automatic life, and is attended with sluggishness and feebleness of mind and faulty nutrition of body. It is a condition of great significance because produced by mental inactivity, and results in wasting of brain substance.

LETHARGY—COMA.

LETHARGY, OR COMA, as it is sometimes called, is an invincible and determined drowsiness or inclination to sleep. It seems often to be a mild species of Apoplexy. The patient is with great difficulty awakened when in this state; if aroused, he often remains destitute both of consciousness and memory, and instantly falls into a sleep again, if left to himself.

Lethargy is often a symptom of Apoplexy, or tendency to that disease; it may also be induced by the habitual use of Opium or other narcotics; and also by derangement of the stomach.

Treatment. — Give an active Hydragogue Physic — a full dose of the Anti-bilious Physic, with as much Cream of Tartar; or powdered Mayapple Root, or Jalap, with a tea-spoonful of Cream of Tartar; or 2 or 3 grains of Podophyllin, with Cream of Tartar. Bathe the feet and legs in Warm Water, and apply Mustard Drafts to the feet, legs, and wrists. If this is not sufficient, give an active emetic, and repeat the Physic, Bathing, and Mustard Drafts. If derangement of the stomach and liver seem to be the cause, give an Emetic first; and after giving a brisk Cathartic, continue the use of some good Liver Pills or Powders, once or twice a day. Bathe the feet often, and the whole surface once a day, with severe friction; take exercise, and make use of light vegetable diet.

DROPSY OF THE HEAD—HYDROCEPHALUS.

MORE properly speaking, Dropsy of the Brain, is a disease which almost exclusively affects children, and generally under three or four years of age. It is very difficult to cure, if once fully established, even by the most skillful physicians; it is also extremely difficult to detect the disease in its early stage, owing to the inability of the little sufferer to describe its symptoms. Thousands of young children die annually of Dropsy or effusion on the Brain, without any one really knowing or suspecting the actual difficulty. Dropsy of the Brain is not an original disease, but is almost invariably an effect of some other disease. It may originate from Teething; but it probably results from Disease of the Bowels, such as Diarrhea or the Summer Complaint, more commonly than from any other cause. There is a strong and very direct sympathy between the bowels and the brain; and there is always danger, in severe and long continued attacks of Infantile Diarrhea, of the brain becoming affected — first by inflam

mation, and then by Dropsy or effusion. Hence more is to be hoped from preventing this dangerous condition than from our ability to cure it after it has taken place. Parents, therefore, and physicians who have the care of children, should always be apprehensive, in bad cases of bowel complaints, of a translation of the disease to the brain, and endeavor to guard against it. Long continued Diarrhea, or too sudden check of the bowels, may cause Inflammation of the Brain Dropsy of the Brain first begins by inflammation, usually of the membrane or covering of the brain, and it is from this organ that the effusion or secretion of water takes place.

Symptoms. — The inflammation in the head which produces the Dropsy is generally gradual and slow, and hence is seldom attended with any very violent symptoms. The most common and unerring symptom is a sleepiness or quiet drowsiness — a sort of stupor. There is undoubtedly pain and distress in the head, and the little patient, though it may not be able to speak, will frequently put up its hands to its head, and make other demonstrations which show that the brain has become involved. The tongue becomes covered with a white fur, the head is unusually hot, face at first flushed, but after a little while is apt to become pallid, or of a natural color: the eyes are dull and heavy, the pulse is feeble, while the arteries of the neck and temples beat strong; the appetite is entirely lost, and often there is sickness at the stomach and vomiting. The bowels now become costive, the abdomen hot and often bloated or tympanitic, while the hands and feet are apt to be cold. As the disease progresses, the child becomes disposed to doze or sleep apparently all the while.

Treatment. — The treatment should be of an active character; that is to say, counter-irritation, such as Mustard Drafts to the abdomen, on the back of the neck, and on the wrists and ankles, and cold applications to the head. At the same time, get up an action of the bowels. This may be done by giving some active but safe cathartic, as a little Podophyllin, say ½ grain, with ½ tea-spoonful of Cream of Tartar, to be repeated every three hours till it operates. At the same time aid the operation of the physic by injections of Warm Water, with a little Sweet Oil and Salt added, or any warm laxative injections. After the Mustard has been on the abdomen half an hour, or as long as it can be borne without too much pain, remove it, and apply warm fomentations, or flannel dipped in warm water, and continue this for some time. Keep the bowels open by means of gentle cathartics, cool applications to the head, and counter-irritation to different parts of the body, to draw the blood and inflammation away from the head. Where it is possible, call in a skillful physician.

CONGESTION OF THE HEAD.

SOME persons are affected with what is commonly called a Rush of Blood to the Head. It is one of the symptoms of Plethora, or overfullness of blood in the system, and of a deranged or unequal circulation. It may also be a symptom of a tendency to Apoplexy. If it leads to Headache, it comes under the head of Plethoric Headache (which I have already noticed), and must be treated accordingly.

A person subject to fullness of the head, dizziness, rush of blood to the head, etc., should pay some attention to the matter, or it may lead to more serious consequences. It will invariably be found that when there are symptoms of Congestion or Rush of Blood to the Head, there will be constipation or costiveness of the bowels. Constipation may, indeed, be the immediate or exciting cause. The bowels being constipated, or bound up, the circulation of the blood in them will be slow and limited; while the overfullness of the bowels causes them to become enlarged, and to press upon the larger blood-vessels passing to and from the lower extremities and lower part of the body, thus interfering with the regular and free circulation of the blood, shutting it off to a greater or lesser extent from the lower part of the body, and thereby causing an undue proportion to be thrown to the head. In such condition, the feet and legs will generally be found to be cold, or cooler than they should be; while the head will be hot, the face flushed, and the veins of the neck full and distorted. If the person stoops, or bends the head down, on rising there will be dizziness, temporary blindness, perhaps, redness of the face, and a feeling of fullness in the head.

Treatment. — Remove the immediate cause — the Constipation of the Bowels. A good dose of Salts will do, or Salts and Senna; or the Anti-bilious Powders or Physic; the Hydragogue Cathartic Pills; or the Anti-bilious or Liver Pills. As soon as the medicine operates, you will feel relieved. If the case is at all serious, the feet and legs should be immersed in water as hot as can be borne, and a large Mustard Draft applied to the abdomen, to act as a counter-irritant, to draw the blood away from the head.

After relief has been obtained, let the patient see to it that the bowels are kept regular, and in an open or lax state, the feet warm, the skin in a healthy condition, and that the diet be plain, simple, and of easy digestion. If the case is not of sufficient seriousness to require any very active measures, simply keeping the bowels in a healthy, regular condition, and the use of the Belladonna Pills (recommended for Sick Headache), by taking 1 pill a day, or 1 every other day, will be apt to be sufficient to remove the difficulty in the course of a couple or three weeks. Or, instead of the Belladonna Pills, take the following: Tincture of Belladonna and Tincture of

Stramonium, of each, ½ an ounce; Tincture of Blood Root, 1 ounce; mix, and take 20 drops once a day, and continue it till all is taken. This will be found an excellent remedy for all symptoms connected with or caused by Congestion of the Brain or Rush of Blood to the Head.

AGUE IN THE FACE—MEGRIMS.

THIS is a species of Headache which is confined almost exclusively to the integuments of the head, that is, to parts outside the brain and skull. It affects the nerves of the face, scalp, and integuments of the head, but most usually the face, on one side or the other. It can not properly be called a Headache. Neither is it Neuralgia, though sometimes it becomes very closely allied to that affection, in which case it should be treated, in some respects, the same as Neuralgia.

It is confined mostly to weak, nervous persons — more frequently affecting females than males, and then those of weak and delicate constitutions and hysterical temperaments. It usually affects some one locality or spot of the face or head — most frequently one side of the face — rendering the place extremely sore or tender, and sensitive to the touch. A gentle or very slight touch, even that of a feather or handkerchief, will often be more painful than a hard pressure of the hand. The surface or skin often becomes red, and not unfrequently swollen. The eyes also become affected, being weak and watery, sometimes red, and usually very tender or sensitive to light.

The pain is also apt to be periodical, like a case of Ague or Intermittent Fever. It may be severe in the morning and forenoon, and gradually abate and disappear in the afternoon and evening — to return again next morning. It is more apt to be worse of a morning and forenoon, and to disappear or decline in the after part of the day. Sometimes, however, it will appear regularly every day, an hour or so after dinner; in which case it usually recedes about midnight, or between that and daylight. It is so "periodical" in character, thus coming and going at regular intervals, in either twenty-four or forty-eight hours (though sometimes even at longer intervals), like the ordinary Chills, or Fever and Ague, that it has, in some localities, received the name of Ague in the Face.

It is difficult to say what is the cause of this peculiar affection. It must, however, be something similar to that which produces Ague or Intermittents, from the fact of its periodical character, and also

because that treatment which will cure Ague or Intermittent Fever will usually cure this. The exciting cause is taking cold, in some way or other. Whatever will produce Toothache, a Cold in the Head, Cold on the Lungs, or an Intermittent Fever, may produce this.

Treatment. — The remedies needed in this complaint should be tonic and nervine; something that will quiet the nervous excitement, strengthen the nervous system, and at the same time break up the periodical or Ague character of the disease, and tone up the whole system. For this purpose Quinine should be used, in connection with nervines and narcotics. The following pills, for instance, will be found excellent: Extract Hyoscyamus, 10 grains; Extract Valerian, 30 grains; Quinine, Ipecac, and Capsicum, of each, 10 grains: make into twenty pills, and take one pill every three hours, during the day and evening, and continue the next day till all are taken. At the same time the part affected should be bathed three or four times a day with a Liniment composed of equal parts of Spirits of Camphor, Laudanum, and Aqua Ammonia or Spirits of Hartshorn.

If the case is a bad one, the feet should be well bathed in Warm Water, and some warm sweating tea taken, such as the "Composition," or Pennyroyal and Sage, and the patient should go to bed; Hot Bricks should be applied to the feet and legs, and one to the side of the face or part of the head affected. About the end of the second day or morning of the third, after commencing the pills I have named, an active purgative — some good Vegetable Cathartic — should be taken. This will remove the unhealthy humors and obstructions from the system, and promote a healthy action of the liver and other secretory organs, and aid greatly in effecting a cure. The Anti-bilious or Cathartic Pills may be used, or any good Vegetable Pills.

To complete the cure and prevent a return of the complaint, the following Restorative Bitters may be prepared and taken: Take 1 ounce Pulverized Peruvian Bark; ½ ounce Pulverized Cloves; ½ ounce Carbonate of Iron; and 2 ordinary-sized Nutmegs finely grated — the whole put into a quart bottle, and 1½ pints of good Catawba or Port Wine added At the same time put 1 ounce of Chamomile Flowers into a bowl or cup, pour ½ pint of Boiling Water on them, and let stand over night; in the morning strain and squeeze out, and add the infusion to the contents in the bottle. Dose: a small wine-glassful three times a day — shaking the bottle when using, so as to take "grounds and all." This is an excellent tonic for weak and delicate persons, especially females, and is peculiarly serviceable in complaints of this kind, especially for persons recovering from all forms of Ague, Chills, Intermittent Fevers, and the like.

Old Wells, Cisterns, etc.—Sewers, cesspools, cisterns, and old wells should never be entered until it has been certainly ascertained that they are not charged with gases and vapors deadly to human life. To insure the safety of any one compelled to descend into such places it is necessary to lower, by means of a string or wire, a tin pan (or other flat vessel) containing a small quantity of ordinary gunpowder, and then ignite that by dropping live coals on it. After the explosion it is well to lower a lighted candle to the bottom. If it continues to burn, it can be taken as a sure test that all danger is removed, and the descent can safely be made.

HEADACHE—CEPHALALGIA.

REMARKS ON HEADACHE IN GENERAL.

HEADACHE can hardly be called a disease, though in some rare instances, perhaps, the seat of the difficulty may be in the head, or brain. It is a very common ailment, however; so common that but little attention is given to it by those who suffer from it much of the time, in some form or other. So trifling has it been considered by the profession that but little is said about it by medical writers. In nine cases out of ten, perhaps, Headache is but a symptom, or effect, of some derangement in another part of the system. Some authors even go so far as to deny that it is ever a primary disease, while many doubt if it ever is so, properly speaking; yet to say this, is to say that the brain, the most delicate and important organ of the whole system, is not susceptible of derangement, or liable to become the seat of disease — a conclusion which we know to be false. The brain is often the seat of disease; so also are the membranes within the cranium, or skull, which surround and inclose the brain. When such is the case, there will be more or less Headache. But cases of this kind, though dangerous enough when they occur, are still so rare, compared with the cases of ordinary Headache, that it is safe to say, that fully nine cases out of every ten are merely symptomatic, resulting from some abnormal or unhealthy condition of some other organ or part of the system, or from a general derangement of the whole system.

Notwithstanding the fact that Headache is seldom a disease, it can very generally be relieved, and often removed entirely, by finding out and removing the cause; that is, by treating the disease, or condition of the system, of which the Headache is a symptom or effect. The main difficulty is in finding out what is really the cause of the disease, affection, or derangement; whether it be of the stomach, the liver, the kidneys, or other organ that is out of condition; or whether it be owing to nervous irritation, to Rheumatism, to derangement in the circulation of the blood, to sedentary habits and the want of exercise, to emotions of the mind, to general debility of the system, or to plethora, or too great fullness of the vascular system. But the cause can generally be ascertained by careful observation; then we can generally remove the symptom by removing the cause — can relieve the Headache by correcting the derangement of the system upon which it depends. Hence, if you have the Headache, do not imagine that there is something the matter with your head, or that the seat of the difficulty is in the brain, but go to work and see if

you can not find out or discover the cause somewhere else; what organ or part of the system is out of order, or what you have been doing lately in the way of transgressing the laws of health; whether you have not been sitting up too late at night, losing too much sleep, eating too late or too hearty suppers; whether you have not been too much confined to the house or the office, and failed to take sufficient exercise in the open air; whether your bowels are not too costive; whether you have not some local complaint that through sympathy may give rise to Headache, as the Piles, Rheumatism, Disease of the Kidneys or Back, Inflammation of the Liver, Dyspepsia, or Sour Stomach, bad circulation of the Blood and Cold Feet, thus causing too great a flow of blood to the head — or some other difficulty or condition, local or general, which may be safely regarded as the cause of your Headache. In nine cases out of ten — more likely a greater proportion than that — it will be found that at least one of the above-named diseases is the cause of the Headache; that it is not a local, primary disease, but results as an effect or symptom, through sympathy from some complaint, or unhealthy condition in some other part of the system, or from a general derangement of the whole. And when you find what the difficulty is, go to work and remedy it. Strike at the cause, the root or seat of the complaint. Very often a slight change in your habits, a little medicine taken, a little care as to what you eat, in short, a little attention to the LAWS OF HEALTH, in your case, will be all that is necessary. But do not expect too much. There are few persons that are not subject to the Headache; many suffer a great deal, or a great part of the time, while in a vast majority of cases, probably, it is impossible, do what we may, to get relief entirely. The most that should be expected, is to mollify, palliate, or give as much relief as possible. Say what we will, and speculate as we may, as to the cause of Headache, the remote or primary cause, it is, after all, probably owing to the circulation of the blood in the brain, or to the presence and influence of the blood upon the brain, or to nervous influence. It may be derangement of the Stomach, Liver, Sedentary Habits, or Rheumatism of the joints, or any local cause, that induces this improper flow of blood to the brain, or makes the blood unhealthy, or (if of a nervous character) that causes the derangement. Yet it is the contact of the blood with the brain that is the immediate cause; hence, so long as the blood circulates, and the nerves are sensitive to pain, so long may it be expected that persons who are subject to Headache will have more or less symptoms of it. If the Headache, for example, is directly caused by too great a pressure of the blood on the brain (and this is the case generally), relieve that pressure, and you

relieve the Headache, and just in proportion to your relief of the pressure; but as it is impossible to prevent all pressure of blood upon the brain, so it is impossible to prevent all symptoms of Headache.

From what has been said, it is evident that Headache is the result of a great variety of causes; consequently, there will be a variety of Headaches, differing in their manifestations or symptoms, and requiring, more or less, a different treatment. There are many transient, slight Headaches, the result of anomalous or unknown causes, which are so trifling that they do not require any special treatment, while again there are others which it may be dangerous to neglect. An individual who is subject to Headache—that is, who has not always, or for a long time, been more or less troubled with it, but who, from some cause, suddenly becomes subject to it—should, by all means, pay attention to it; and if he is not able, from any thing he can do or discover to relieve it, should consult a skillful physician, who will give the matter proper attention.

For the sake of convenience, and the better to determine as to the treatment required, Headaches are divided into several classes or kinds, according to the nature of the causes supposed to produce them. Thus we have Headache from plethora, or overfullness of blood; Headache from a deficiency of blood, or general debility; Headache from Fever and inflammatory action, Rheumatic Headache, Nervous Headache, Sympathetic Headache, Stupid Headache, Chronic Headache, Periodical Headache, and Sick Headache.

PLETHORIC HEADACHE.

This class of Headaches includes all cases where undue determination of the blood to the brain is the cause. Where there is too much blood in the system, the Headache will be more or less continuous, and there will be a feeling of fullness in the head, the pain mostly dull and heavy; the head will also be preternaturally hot. There will be dizziness after stooping, blowing the fire, for instance, on straining, and such other symptoms as occur in persons predisposed to Apoplexy. Suddenly shaking the head will also aggravate the pain. The fullness in the head, and the pain, are apt to be increased soon after eating a hearty meal.

Where the excess of blood upon the brain is caused, not by general plethora, but by a derangement in the circulation—in other words, a withdrawal of blood from some parts, and a determination of it to the brain—the pain is not so continuous, and not so dull and heavy, but will at times be quite acute. In this kind of Headache, the feet and lower extremities will be cold, or always when the Headache is

owing to the fact that the blood does not circulate properly in them. The head will also be unusually hot, and there may be redness or flushed condition of the face and eyes, and perhaps throbbing sensations in the head, especially if the determination of blood and the pain are great.

Treatment.—If the difficulty is produced by too much blood, a treatment calculated to deplete the system must be pursued. A proper course of dieting will be very important. The patient must live on food that will be unexciting, cooling, easily digested, and, if possible, that will tend to keep the bowels open—a vegetable diet, mainly of a laxative nature, such as brown, or "Graham Bread," fruits, and the like. He must avoid rich, strong food. At the same time an active Hydragogue Cathartic should be taken about twice a week for two or three weeks. One active dose will always give immediate relief in most cases of Headache; but in order to produce any permanent relief, it will be necessary to continue the treatment, both in diet and in medicine, for perhaps several weeks. The idea is to change the condition of the system, to deplete it, and especially to reduce the quantum of the circulating fluid. The following will be found an excellent preparation in such cases: Take Podophyllin, Gamboge, Scammony, Rhubarb, and Cayenne, of each, 20 grains; make into about twenty-five pills; use a little Extract of Mandrake, or Dandelion, sufficient to form into pill mass; or if you can not get the Extract, use a little Gum Arabic Solution. If you can not get the Podophyllin, use instead the same quantity of Aloes; but the Podophyllin is better.

Give to a grown person three of these pills on retiring at night, and at rising in the morning. They will be likely to operate several times during the day. Repeat the pills three or four days later. Or give three or four pills early in the morning, and then one pill every two hours till they operate thoroughly. Continue this course twice a week, for two or three weeks; after that, once a week, for two or three weeks longer.

Where the difficulty is simply a determination of blood to the head, with cold feet, etc., the above pills, or something similar, should be given, and the feet and legs bathed in warm water, as warm as can be borne, with ground Mustard, or Cayenne Pepper added, and rubbed well for half an hour, say twice a day, but especially at night, before going to bed. Free exercise should be taken daily, warm woolen stockings worn, and if the feet are still cold, put a little powdered Cayenne in the bottom of the stockings. If this does not prove sufficient to restore the circulation and relieve the head, some diffusive stimulants must be taken, to throw the blood to the surface, and to the extremities. There is, probably, nothing better than a bottle of good Bitters, with plenty of Cayenne Pepper (or Red Pepper) in it. Prepare any good Bitters, of roots and barks, in a quart of Whisky, and add enough of the Pepper to make it very hot; then take a tablespoonful or two, three times a day. Also, bathe or wash the whole body morning and evening, rubbing the surface well to get up a

healthy action in the skin, which will tend to invite the blood to the surface.

The following pills will also be found stimulative, as well as equalizing the circulation: Take Cayenne, pulverized, 60 grains; Quinine, 10 grains; Ipecac, 20 grains; pulverized Opium, 10 grains; make into thirty pills, and take one pill night and morning. Keep the bowels loose, let the diet be moderate, and take plenty of exercise.

NERVOUS HEADACHE — STUPID HEADACHE.

There is a species of Headache frequently called Stupid Headache, from the fact that it is not acute, not very painful, but yet unpleasant. The person who is subject to this Headache has a continued feeling of dullness and confusion in the head, and often a dimness of sight and deficiency in hearing. The mind seems weak, and the system not capable of continued mental exertion or labor; the memory becomes defective, and, though the person appears and feels stupid, he can not sleep, but is wakeful and restless at night. There are no very striking symptoms, nothing more marked than a low, dull pain, or uneasy feeling in the head, and a feeling of stupidity and dullness of the mind.

This condition arises from general debility of the nervous system, or it may be from a deficiency of the nervous fluid, and a general debility of the system. It is directly the opposite of the Plethoric species of Headache, both as to cause and as to symptoms. It is often called Nervous Headache; but it is, more properly speaking, anti-nervous, or the absence of nervous influence; and is owing to a deficiency or exhaustion of the sensorial or nervous fluid — to a weakness of the nervous power. This may, in turn, be owing to a weakness or deficiency in the blood, or to general debility of the system. It may be induced and brought on by long and hard study; hence, students are, not unfrequently, troubled with this species of Stupid, or Dumb Headache. It is also caused by severe and long-continued grief, by trouble, by desponding emotions, and by the mind dwelling on the dark side of subjects. Debilitating and exhausting diseases, as Diarrhea, immoderate loss of Blood, the Dumb Ague or long-continued "Chills," and whatever tends to produce debility, either of the whole system or of the brain, may produce this species of Headache.

Treatment. — First find out the cause of the difficulty. Is it from long and hard study? Then discard studying and pursue something else; something wherein the body is exercised more, and the mind less. Is it from grief? from melancholy? or from any other emotion of the mind? Overcome or remove that condition or state of the mind by appropriate means — a change of locality, of scenery, of freer mingling in the pleasures of society, cheerful and lively company, and

the like. But there is nothing so good as traveling — a change of locality and of surrounding objects.

If caused by nervous debility — wherein there will, of course, be general debility of the system — means must be employed that will be calculated to strengthen and restore the physical system, the general health and strength of the body. Regular, moderate exercise, in the open air, will be one of the most essential means. Bathing, night and morning, simply by sponging or washing the body all over with a sponge or towel, and rubbing well with the hands, will also be found very advantageous. It is strengthening to the nerves, keeps the skin in a healthy condition, and thus promotes free and equal circulation of the blood. The water used for bathing purposes should be warm or tepid at night, and cold in the morning; the head, however, should always be bathed well with cold water. The surface of the body should be rubbed well with a dry towel after bathing.

At the same time some tonic and strengthening medicine should be taken, which shall at the same time act as a stimulant to the nervous system. Have prepared and take the following pills: Extract of Hyoscyamus, 30 grains; Extract of Valerian, 30 grains; Quinine, 20 grains; Cayenne, 10 grains; make into thirty pills, and take one pill, three times a day. Should the Headache be acute, severe, and entirely nervous, then in preparing the above pills, add to the mass 3 grains Sulphate of Morphine, and then give one pill every three hours until four or five are taken, after which give them as before recommended (one three times a day), or according to circumstances. With the Morphine added, they are excellent for Neuralgia in the Head and Face, and may be used in all cases of Neuralgic Headache, only you should not give more than five pills in the course of twenty-four hours, on account of the Morphine. Five pills would contain ½ grain of Morphine. That is as much as any one should take within that length of time, and only then when suffering from extreme pain.

Other Tonics, strengthening Bitters, and Restorative Medicines, may be used. Should there be paleness of the skin, showing a deficiency or poverty of the blood, take the following: Muriated Tincture of Iron, 1 ounce; Tincture of Blood Root, 1 ounce; mix, and take 30 drops, three times a day, in a little water. Being a good blood tonic, it may be taken at the same time other medicines are being used.

INFLAMMATORY AND RHEUMATIC HEADACHE.

There will always be more or less Headache in cases of Fevers, and inflammatory conditions of parts of the system. This every one knows who has suffered from such diseases. So will there often be Headache in case of Rheumatism of any part of the body; especially if the person is more or less subject to Rheumatism. In a Rheumatic condition of the system, the Headache is generally relieved or absent when the Rheumatism is active, and shows itself in some particular

locality; while, when the Rheumatism subsides, the Headache will set in again. If there is a general Inflammatory Rheumatic action, there is apt also to be Headache, as in any other case of general fever or inflammation. In all cases of this kind, the way to relieve the Headache is to relieve or remove the cause, or the disease which causes it. It is unnecessary, here, to give directions in regard to Headache during fevers, inflammations, and other leading diseases, as that will be found already done in connection with the treatment of those diseases. Headache is a symptom of such diseases, and means for its palliation (for that is all that can be done) will be found recommended under its appropriate head.

If the person, however, is at all troubled with Rheumatism, whether it be continuous or only at times, you may safely conclude that the Headache proceeds from that cause; in which case you should employ Anti-rheumatic Remedies. Treat the same as a case of Rheumatism (which it in reality is), and at the same time pay particular attention to the circulation: that is, to equalize it. Bathe the feet and legs often in warm water, and rub well, in order to invite the blood to the lower extremities; bathe the head, if in much pain, in cold water; use Rheumatic Liniments, if the Rheumatism is of a local character; and at the same time give, internally, some one or more of the medicines recommended for Constitutional Rheumatism.

SYMPATHETIC HEADACHE.

Is that species of Headache which results from sympathy, merely, with the affection or diseased condition of some internal organ, as the kidneys, the liver, the bowels, or stomach. It may be partly from inflammatory action, as from inflammation of the liver, stomach, or bowels; or it may be purely sympathetic. In either case, it will be very easy to trace out the cause. Find out where the seat of the complaint is, and make preparations to relieve it. The proper treatment will be found under the head of the particular disease or condition which, from the close sympathy that exists between the affected organ of locality and the brain, induces the Headache. Women during pregnancy, often suffer from this species of Headache. In such cases, palliation is all that can be expected during the period of gestation. The bowels should be kept in a lax condition, the feet warm, and an equalized circulation of the blood maintained, as much as possible.

CHRONIC HEADACHE.

This means Headache of long standing. It is where the person has suffered so long with it, or where the cause which induced it in

the first place was so severe, that it has become organic or constitutional — a fixed condition of the brain and organs implicated. It was probably produced, in the first place, by a severe spell of sickness, in which the head or brain was deeply affected. It may have been Inflammation of the Brain, or its membranes; or some severe Fever, in the course of which the brain became seriously affected. The membranes very likely have become thickened, or some portion of the organic structure so changed as to become of a fixed, morbid condition. Although the pain may not be very severe, nothing like it was in the first place, yet it probably can never be entirely removed.

The Headache, or pain, in this species, is apt to be confined to one particular locality or part of the head, as upon the top, or at one side, or over one eye, or it may be over both, or in the whole forehead; or it may be confined entirely to the back part of the head. It is a peculiarity of this kind of Headache that it is almost always confined to some one spot of the head; it may be one half, but it much more frequently affects but a small spot or portion of the head. It is also apt to be periodical — that is, to come and go at regular periods, though it is seldom or ever entirely absent. It is not, therefore, intermittent, but is remittent, being worse or better at regular or irregular periods.

Treatment. — This species of Headache, as may well be imagined, is difficult to cure. Indeed, it can seldom be cured, especially if it has long existed. The most that can be expected is, that it may be partially relieved. You should be careful, however, not to mistake Rheumatic Headache for this species, as in the former there will also be remissions or intermissions. In the Rheumatic species, whenever the Rheumatism attacks some other locality, the pain leaves the head, being transferred; but then you will readily know that it is Rheumatic Headache by the fact that you have Rheumatism in some part of the system at the time.

In Chronic, or, as it may be called, Constitutional Headache, the treatment should be of a general and constitutional character, and various plans and remedies should be tried. Of course the less pressure of blood on the brain the better. The disease or derangement was most likely caused, in the first place, by too great a pressure or determination of blood upon that organ. To equalize the circulation of the blood, therefore, as much as possible, and keep up that equal circulation, will be a consideration of the highest importance. This must be done by keeping the bowels in a soluble or lax condition — that is, free from costiveness. This alone will be found to give great relief in most cases.

Laxative, or mildly Cathartic Medicines, such as the Liver Pills, or pills made of Extract of Dandelion, or Extract of Butternut, with powdered Mandrake Root, or a little Podophyllin and Cayenne Pepper, will be suitable — taking one pill a day, or one every other day.

The diet, also, should be such as to favor an open condition of the bowels — such as bread made of unbolted Wheat Flour, Mush and Milk, Corn Bread and Stewed Fruits. If the pain is severe, as it will be at times, a Mustard Plaster, or an irritating Pitch Plaster might be applied to the back of the neck. If the latter kind of plaster, let it remain several days, or a week or two, so as to cause a running sore. It will do good.

Should there be at times fever, or unusual heat in the head, or that part where the pain is located, apply cold applications, as in other forms of Headache, and be sure to keep the feet warm all the time. Pay some attention to the stomach! It will likely be found that when the pain in the head is the worst, there is a sour state of the stomach, or symptoms of Dyspepsia or Indigestion. If the stomach feels badly, give an Emetic, or a little Alkali, as a tea-spoonful of Saleratus, dissolved in a little Water or Milk, or as much Carbonate of Soda, and taken once or twice a day, to destroy the acidity of the stomach. There is a direct and great sympathy between the stomach and the brain, and whenever the former is out of order, the latter is sure to suffer more or less.

Keep the bowels regular, the stomach free from acidity, the skin in a healthy condition, the feet warm, the head cool, and an equal circulation of the blood, and you may expect the best results that can be hoped for in this species of Headache.

If the paroxysms of pain should be marked by regular periods, as coming at such an hour every day, every other day, or at longer regular intervals, give, also, tonics — that is, treat as a case of Intermittent Chills and Fever, or Dumb Ague, or rather Masked Ague. Give Quinine, or other anti-periodic medicine, the same as for a case of Ague, in addition to the other treatment recommended.

In Chronic Headache, where the pain is located in the forehead, or fore part, or top of the head, as well as in some other forms or kinds of Headache, relief may often be obtained by using some sort of vegetable Headache Snuff, or Catarrh Snuff. Perhaps the best preparation for such purpose is composed as follows: Take equal parts, say an ounce of each, of pulverized Bayberry, Peruvian Bark, and Sanguinaria Canadensis, or Blood Root: mix well by rubbing them in a mortar, or otherwise, and use this as a regular snuff, several times a day. A little Cayenne may be added, say a tea-spoonful to the above quantity, with advantage; and if the person prefers, half an ounce, or ounce, of Scotch or Tobacco Snuff may also be added. This preparation, used pretty freely, will often relieve mild forms of Headache, and is always good in cases of Catarrh, or Cold in the Head, where the nostrils and Snyderian membrane are affected.

SICK HEADACHE — PERIODICAL HEADACHE.

This is by far the worst species there is, or rather it is the worst and most troublesome complaint which comes under the name of "Headache." It is not, properly speaking, a Headache — that is, the disease is not seated in the head; the pain in the head, like most

other cases of Headache, being but symptomatic of some other disease or derangement. Sick Headache unquestionably originates in the stomach and liver, or is owing to a sort of periodical derangement of the functions of those organs.

Sick Headache appears usually at regular periods, generally about every two weeks, or every month. In some cases, however, it comes on at irregular and much longer periods. The leading symptoms are sickness at the stomach, nausea, and sometimes vomiting, flashes of fever, heat in the head and face, and often redness in the face, and severe pain in the head. The pain may be in all parts of the head, but it is often confined to the forehead and temples, or is more severe there than in other parts. Sometimes, however, there will be severe pain in the back part of the head and base of the brain.

This troublesome complaint affects some persons so severely that they will be "laid up," or confined to their bed, for several days at each attack. It is a very sickening, unpleasant disease — a good deal like Sea-sickness in some respects, though with more pain in the head. The disease affects females much more frequently than males. By some medical writers it is thought to be in some way connected with the periodical sickness of the sex, but we doubt if there is any such connection. Though it is much more common among females, yet men are known to be subject to it, and to have it in as marked, regular, and severe forms as it ever affects women. It also "runs in families" to some extent — not that all the members of a family will have it, but that in some families several members may be subject to it, and it will likely, in such cases, extend from generation to generation. If, for instance, a mother is subject to the disease, one or more of her children, or grandchildren, will be likely to have it.

Some authors suppose the disease to be entirely nervous, and depends upon some peculiar action or condition of the brain; but this, we think, is altogether erroneous. They mistake the effect for the cause. One strong, and to our mind satisfactory, reason why it originates in the stomach and liver, perhaps the liver alone, is the fact that proper treatment directed to those organs, in cleansing the stomach and rousing the action of the liver, invariably relieves the complaint; and such treatment has always been found to be of decided benefit, or that can be relied on in a majority of cases.

It is unnecessary to describe the disease further or more particularly. Those who have had the Sick Headache know the symptoms which generally precede the attack, for a day or two, before it becomes fully developed; and they generally, if they are subject to severe attacks, make their calculations to be "laid up" for two or three days, or a week. What is most important, is to know how to cure

it, or to render the attack as light as possible, and to finally prevent it altogether.

Treatment.—The most important and certain remedy in Sick Headache, is a good, thorough Emetic. For this purpose, there is nothing better than the common Emetic Powder; that is, equal parts of Ipecac and Powdered Lobelia Seed, about 1 table-spoonful to ½ pint of Hot Water; let stand and "draw" for a few minutes; then give in two or three portions, at intervals of five to ten minutes. The patient at the same time should drink freely of Pennyroyal, Sage, or Composition Tea. It is always well, in giving an Emetic, to "prepare the stomach" first, by the patient drinking ½ pint or so of some warm, stimulating Tea. An infusion of the Composition Powder (see "Composition"), Pennyroyal, Sage, Catnip, or any other Warm Tea will do; or Warm Water, Chicken Broth, or Gruel.

After the patient has vomited a couple of times pretty thoroughly, a little gruel should be given, and he should be allowed to rest quiet in bed for two or three hours. After which an active Cathartic should be given, such as will rouse up the liver, and remove any obstructions, or undue accumulations of bile, that may exist in that organ or any of its excretory ducts. The following is an excellent preparation, which may be used in all cases of Liver Complaint, Sick Stomach, Bilious Affections, and wherever a safe and effective Vegetable Cathartic is needed: Take Pulverized Aloes, 60 grains; Castile Soap, Gamboge, Scammony, Podophyllin, and Capsicum, of each 30 grains; make into 60 pills, with a little Extract of Dandelion, Mandrake, or Boneset — adding at the same time about 20 drops of Oil of Peppermint, or Cloves. Dose: from three to five pills, as a Cathartic; as simply a Liver pill, to act on that organ, regulate the bowels, and cleanse the system, one pill once or twice a day. In case of Sick Headache, about three pills should be taken; and twelve hours or so afterward, give two or three more. After a prompt and thorough action of the bowels, one pill every evening should be taken for a few days.

Other auxiliary measures are at the same time to be resorted to, especially if the case is a severe one, and the patient is confined to his room or bed with it. The feet should be well bathed in Warm Lye Water, Warm Water with a lot of Ashes in it; or the water may be made pretty strong of Salt. The feet and legs should be thus soaked for half an hour or so previous to and while taking the Emetic. Applications of Spirits of Camphor, or Vinegar, or, if much heat in the head, of Cold Water. The patient also should be allowed to smell of Camphor, or Hartshorn, Cologne, and the like; such inhalations by the nose will often relieve both the Headache and the distressing sickness at the stomach. It would be well to bathe and wash the patient all over, once or twice during the attack, using Warm Alkaline Water, that is, Warm Water with a small quantity of Saleratus or Lye in it. This removes the oily substance from the pores of the skin, and is beneficial in almost all diseases or conditions of the system.

Sick Headache undoubtedly proceeds, as I have already remarked, from a deranged or unhealthy condition of the stomach and liver. It is probably from a morbid or unhealthy action of the latter organ.

Rest.—During a severe attack of Sick Headache, the patient, if this be possible, must have complete rest, so that the organs which are deranged may be allowed to gradually right themselves. The mind and the nervous system need repose as well as the stomach, liver, and other organs.

Warmth.—Exposure to cold often precipitates an attack of Sick Headache if one is about to come on. Indeed, many sufferers attribute the illness to the direct influence of cold. Sick Headache is certainly relieved by warmth. A warm bath sometimes removes the Headache, and almost always gives relief for the time.

Counter-Irritation.—There is no doubt whatever that considerable temporary relief is afforded during an attack by the employment of Counter-Irritants. A Mustard Plaster (half Mustard and half Linseed) to the back of the neck or to the pit of the stomach will relieve the pain.

Acids.—It is curious that in many cases in which acids are produced in undue proportion by decomposition of various materials in the stomach, there should be a natural desire for things having an acid taste. Lemon or Lime Juice and Water is very grateful to some, allaying the distressing nausea often present.

Tea-Drinking in Sick Headache.—Some sustain themselves during an attack of Sick Headache by drinking several cups of tolerably strong Tea in the course of the day. The Tea seems to keep them up, to mitigate the severity of the Headache, and to relieve the nausea.

In addition to the remedies I have named, another very excellent remedy, and one relied on altogether by some, is Belladonna. It is the principal Homeopathic remedy in this disease, and is good in almost all forms of Headache. The form in which I would recommend it is as follows: Take Extract Belladonna, 10 grains; Ipecac, 10 grains; Capsicum, 10 grains; Extract Dandelion, 20 grains; make into 20 pills, and give one pill three times a day, or every six hours. This may be done, whether you resort to an Emetic or not. If you do not give an Emetic, you should commence giving these pills as soon as the first symptoms appear, and in about twenty-four hours after give the Cathartic Liver Pills.

All sufferers from Sick Headache should do all they can to avoid worry. Peace of mind and freedom from anxiety are of course to be desired for every one, but those prone to this malady should be doubly careful, and should avoid responsibilities which make them anxious. So also they should exercise as much self-control as possible, and endeavor not to give way to restlessness and fussiness, which only increase the severity of the attacks.

SECOND DIVISION.

NERVOUS DISEASES.

NERVOUS AFFECTIONS.

PRELIMINARY REMARKS—CAUSES OF NERVOUS DISEASES.

HOW many of the sufferings which annoy the human family, especially those of a nervous nature, might be avoided, if we would only refrain from the violation of the Laws of Health, by not indulging the appetites and passions! Scarcely any subject is more unwelcome, especially to those who prefer to indulge their appetites and risk the injuries likely to result, rather than bridle their passions and retain their health. Such often insult their Maker by attributing their sufferings to Providence, rather than to their own folly or imprudence, in the violation of His laws, to which are affixed penalties that can not be evaded. As to our accountability, no one will deny it. Many, however, seem to think that they have a right to violate the laws of Nature with impunity, and treat their own bodies as they like, forgetting that God will hold them responsible for every infringement, and that they will meet with its legitimate and appropriate retribution. The brain is the seat and origin of all the nervous forces; it is made up of bundles of nerves; it is the seat of mental action; its organic formation is affected by the action and growth of the different characteristics of the mind. The nerves, proceeding as they do from the brain, carry out its influences and commands into all the functions of the animal economy. From it go out various branches of nerves, to transmit, like so many telegraphic wires, the electric fluid, which is inseparably connected with the vital action of every part of the body. All the organs of the brain subserve important purposes, while their action is kept within the limits originally intended for them by their Creator. The nerves generally run in pairs from the brain and spinal cord — the great nerve of the backbone — to all parts of the body. A pair of nerves

is contained in one cord. One of this pair is the medium of sensation, and the other of motive power. The one communicates feeling to and from the brain and all other parts of the body; the other gives the power and the command of motion of every part of the muscular system. These nerves are the means by which every part of the body, in regard to its sensations and motions, holds intercourse with every other part. They form the medium through which the brain receives intelligence from other parts, and governs and controls all the organs of voluntary motion; and, to use the comparison, are the telegraphic wires from the brain, which is the telegraph office from which the dispatches are continually sent, during the active hours of life, on matters pertaining to motion and sensation, to all parts of the system. Frequently, from some injury or other cause, the nerves cease to transmit their electric fluid furnished from the great galvanic battery, the brain; then the brain, or the will, through the brain, ceases to command and control motion, and sensation is thus destroyed. We frequently find the arm or leg in what is called a sleep. This is caused by a stoppage of the circulating electricity in its course, by pressure on the nerve of the part. This pressure being removed, the electric fluid flows on, and sensation and power of motion gradually return.

Sensation and voluntary motion are not only dependent on a right electric circulation, but also those functions which involve involuntary action. Digestion in the stomach, and the pulsation of the heart, are carried on by electric forces. Cut the nerve communicating with the stomach, and digestion ceases; apply an electric battery, and digestion progresses again. The circulation of blood through the heart and arteries is, doubtless, kept up by the attractive and repulsive forces of electric currents. All the forces of Nature in the circulating system are greatly dependent on this electric agency. For instance, the wounds or sores of palsied limbs are much slower and more difficult in healing than other parts. No vital function can be properly carried on without a right performance of the electric forces.

From a knowledge of these facts, which is evident to every reflective mind, great pains should be taken by every man and woman to preserve the nervous system in a perfectly healthy state, by controlling those habits or vicious practices which decrease or diminish not only the physical functions, but the mental forces also; for the nervous system is the connecting medium of sympathy between mind and matter. Hence the injurious effects of using stimulants and narcotics on the nerves.

The great injury done to the electric forces by the use of such agents

as Coffee, Tea, Opium, the habitual use of Spirituous Liquors, and last, though not least, Tobacco, which latter is a far greater injury to the nervous system than is generally supposed, is more permanent and irretrievable than can be possibly imagined; yet their influences are so deceptive to their lovers, that very few have fully understood their destructive power. The exhilarating force, felt on taking them, blinds the mind to the reacting influence which must inevitably follow. Alcohol burns up the system by its carbon and inflammable gases, so that spontaneous combustion of the whole body often takes place. How many have gradually stepped forward and onward in this path, which has conducted millions to ruin, whose sensual appetites and passions have weakened and vitiated their mental, as well as their physical system, to a degree of imbecility which sooner or later, has ended in the most fearful consequences, Delirium Tremens! Think, then, of the unmeasured woes of the drunkard's family, and the hereditary taint which a drunken father or mother bestows as an inheritance upon their children.

That children inherit from their parents a tendency to particular diseases and traits of character, can scarcely be denied. Nothing, indeed, is more common than to see the exemplification of this almost generally received opinion. Indeed, the peculiarities which distinguish individuals are no less conspicuous in their constitutions than in their countenances. In the same manner, we can not doubt that these hidden peculiarities are as often transmitted from parents to their offspring as the more obvious ones connected with external form and features of the face. Will any one of common reflection say this is a matter of fancy and not of fact? The truth is, there are individual instances everywhere, but comparatively few realize it. In every instance where either of the parents' habits are contrary to physical laws, they are doing an injury which will be more or less felt in the generations to follow them. How many parents, by indulgence in intemperate appetites and sensual dispositions, inevitably place upon their offspring the grossness of their own physical and moral deformities, making themselves responsible for the evil conduct of their children, who thus, perhaps, bring their gray hairs in sorrow to the grave!

Intermarriages between certain degrees of consanguinity or relationship, particularly among the wealthy aristocracies of all countries, whose members are generally indolent epicureans, are a frequent cause of diseased nerves. Imbecility and idiocy are too frequently bestowed on successive generations by these injudicious and unnatural alliances. The entailment of disease by hereditary descent is a most formidable evil, which throws obstacles in the way of re-

covery that can never be entirely removed, and are inseparable from the temperament in which they exist. Medical aid may, indeed, render them less formidable; but they are intrenched within the fortress of Nature, secured and guarded by morbid associations which have existed from the foundation of the embryo, are coeval with the dawn of infantile existence, and will be eradicated only in the grave. If two individuals, of weak frame and excitable nervous systems, injudiciously wedded, behold in the attenuated forms and pallid countenances of their offspring the seeds of diseases to which death would be preferable, and will inevitably be the termination, as Scrofula, Insanity, Melancholy, or Nervous Diseases of some sort, let them not blame Nature, but themselves, for the inauspicious consequences which have been entailed on their diseased progeny.

The command given to the great Hebrew lawgiver, not to permit his people to marry within certain degrees of consanguinity or relationship, was and is in strict accordance with the laws of our being. The wisdom of the prohibition has been confirmed by the experience of countless generations.

If the reader could be informed of the various cases that have come under my notice of Nervous Diseases, from the causes I have given, he would not be at all surprised at the variety of nervous paroxysms that afflict the human family; which may be diminished or increased by excitements, or disease, in proportion to the sensitive or morbid nervous character of the patient.

The deadly poison, Tobacco, is working greater physical devastation to this generation than can be possibly imagined, and may be called the twin sister of Alcohol. This low, vulgar, and unnatural habit, that is enervating the vital and moral energies of the constitution, will affect posterity. It is one among the great causes of Nervous Diseases, as it diminishes the natural energy of the brain and nerves, and is productive of the most serious consequences to those who indulge in it even slightly. Tobacco is one of the most deadly narcotics found upon the list of poisons. A very few drops of its condensed properties will destroy life. Indeed, a single drop of its nicotine oil will kill the stoutest dog. If any doubt can be indulged in regard to its power, let any one who has never used it, chew a small piece, and the genuine effect of the article will soon manifest itself; though the habitual use of it stupefies the nervous susceptibilities, yet the real power of the article is daily absorbed into the system, and is doing by degrees, perhaps by imperceptible progress, its deadly work, prostrating the whole nervous system, and is destructive to the right quality of that principle which becomes the origin of life.

People are apt to think that because a certain habit, such as using Alcoholic Drinks or Tobacco, etc. — which they, perhaps, in theory admit to be bad — does not immediately destroy life, or make them invalids, they are receiving no harm, and are under no obligation to change their course. They judge of their obligations to physical law, as they do of their obligations to moral law; that because judgment against an evil-doer is not executed speedily, they may sin on with impunity. But punishment for violated physical law will sooner or later come. If those who offend could bear the rod alone, their crime against Nature's government would seem to be of less consequence. But when we know that the innocent offspring must bear a share in the punishment due to their parents, their offense seems to swell to a tenfold magnitude. Among those who act without reflection, the wide distinction between prevention and cure has not been generally recognized. They are apt to think that all diseases must be cured by drugs; but this is not the fact. Broken constitutions and premature death are generally the effects of the violation of laws of Nature, produced by false appetites and ruinous indulgences. They forget the old proverb, "An ounce of prevention is worth more than a pound of cure."

By letting her have her own way, Nature, without stimulants or drugs, will put forth her very best efforts to set every thing right, in nine cases out of ten; curing many diseases, especially those not of chronic form, when the primary cause is removed. Nature will perform the cure better without medicines than with their use; for in thousands of instances they do harm instead of good.

The truth is, all medical agents, except those of the most simple kind, are at war with the laws of healthy life. If we would place more confidence in the curative powers of Nature, and give more attention to the laws which govern health, than to the constant use of drugs, we would succeed in removing many complaints, which, to say the least, drugging will frequently not do.

It is impossible to form a correct estimate of the injury and vast disturbance, in their effects on the system, of those various stimulants which are used to spur up the jaded nerves, or quicken the mind that is drooping under the reaction of a former excitement. An unnatural, greedy appetite seems to predominate over better judgment, reason, conscience, and all the higher powers of Nature. Health, with all its attendant blessings on the soul, is worth something, they admit; but the gratifying of low appetites is valued more. In view of these facts, great pains should be taken by those who care for health, to preserve the nervous system in a perfectly healthy state.

Obedience to the Laws of Health should be made a matter of indi-

vidual and personal duty. It is, therefore, every individual's duty to study the laws of his being, and to conform to them. Ignorance, or inattention on this subject is sin; and the injurious consequences of such a course make out a case of gradual suicide.

A vile and vicious habit, which destroys the nervous strength and ruins the constitution, is Self-indulgence, called Masturbation. This secret sin is doing a great amount of injury to the human race. It often begins early in life and continues by habit till its work of destruction has so enfeebled the reproductive power as to render marriage inexpedient and even improper. (See the article on "Solitary Vice and Self-abuse.)

Mental health also is essential to a healthy state of the nervous system, as great mental exertion and application tend greatly to destroy a proper balance of the brain, as well as to injure or transmit a morbid influence, or, in other words, lower the standard of nervous strength.

NERVOUS EXHAUSTION IN THE YOUNG.

Some diseases indicating great nervous exhaustion or failure are due to certain habits to which the young are subjected in enforced mental training, and in the endeavor to fill their minds with what may be fairly spoken of as an excess of knowledge. Apart from its failure as a true educational result, the very distinct physical mischiefs engendered in forms of bad health or disease are usually marked and quite significant.

In children who are predisposed, naturally, to tubercular affection, the effect of habitual overwork of the brain is to favor inflammatory tubercular disease and deposit in or upon the brain. To such as are of nervous temperament, but not specially disposed to tubercule, the oppression on the brain tends to congestion of that organ, and to the production of attacks of convulsion, it may be, of an epileptic character.

In less serious cases, overwork causes weakness and exhaustion of mind and body, with dyspepsia, a dislike for active exercise, imperfect sleep, reduced growth, limited expansion of the chest, and anæmia. When the brain of the growing child is habitually overworked, however well fed and clothed the person, there will be proportionate over-waste of nervous power, ending, naturally, in the formation of a bad physical body.

The habit of mental strain leads to broken rest, insomnia more or less severe, and to the evil results which follow. The effect is not commonly a success at the time, and afterwards all is loss. The failure in general health leads to comparative failure in every effort of life, with a resultant unhappiness, which intensifies the original error, and to trouble adds trouble

Nervous failure often results from the *opposite* of mental strain, viz., a lack of occupation for the mind and of useful work for the body. Not infrequently these persons are the children of idle and luxurious parents. Often they are of those most unfortunate pets and pests of society, who, in the family and friendly circles, are considered too weak, or too good or superior, to be subjected to any course of service that shall meet the wants or supply *comforts* to those about them; indeed, they are trained to feel that they confer a privilege on those who are allowed to *wait* upon them. These idlers, who are encouraged in it by indulgent or apathetic friends, suffer through life from feebleness, the result of inertia rather than of disease. The men are apt to become dissolute from drink, and fall into abject helplessness or general paralysis, while the women will grow to be hysterical, feeble and timid, and will often, at best, become helpless mothers of helpless children.

The sympathy existing between the mind and the body is so great, that when one is affected, both are affected. Persons devoted to mental labor, merchants, counting-room clerks, or those of similar occupations, who are confined, require daily exercise in order to preserve a balance of muscular and nervous energy. By attention to this important matter, a short space, each day, of relaxation and exercise might save many a broken constitution or premature age, and the nervous system be invigorated and again restored to equilibrium; for bodily health can not be secured without due attention to exercise, which should consist of something which not only gives exercise to the body but amusement and exhilaration to the fatigued mind.

Many a one has broken down irremediably his nervous system, by taking too little physical exercise, and in taxing the brain with mental labor, thus neglecting to keep up a proper balance of action between the physical and intellectual powers.

This important fact should be borne in mind, that the nervous system, or its energies, are closely connected with the stomach or the digestive process; therefore, any forced action on the stomach, which may be properly called the mother of the system, exerts a powerful influence over the health of the body and mind, which has much to do especially with the digestive organs. By this unnatural forced action on the pneumogastric nerve, which is connected with the stomach and muscular coat, we often bring upon ourselves many of the hidden diseases and uncomfortable sensations produced by Dyspepsia, Flatulence, Nervous Complaints, etc. It is fully exemplified in the process of digestion, immediately after a full meal, which renders any considerable physical or mental exertion at that time particularly burdensome, and is proved in the conduct of dumb animals. The distinguished and able writer, Dr. E. B. Cook, in his *Philosophy*

of Health, makes the following statement: "When the ox or the horse has grazed a full meal, he immediately becomes indisposed for exertion or activity. And the same rule should be observed in regard to his labor, that has been recommended for human beings. He should never be forced into hard labor short of one hour after he has eaten his meal. The ferocious animals, when they have taken a full meal, lose for a time their fierceness, and are comparatively harmless. And so it is with men. If it be necessary to ask a favor of a morose or tigerish man, seek an interview immediately after dinner; if a charity is to be solicited from a creature who carries a miser's soul within his incasement of flesh, see him immediately after dinner. At any other time than after a full meal, he would resist, and succeed, probably, in warding off every motive; but while the nervous energies are taxed with the digestive effort, he can not rouse himself so well to meet the emergency. He will rather grant the favor asked than annoy himself with the effort necessary to repel the invader."

THE TEMPERAMENTS.

THERE are four temperaments, which is a term of constitutional character with respect to the development and energy of particular parts of the bodily system.

1st. The *Lymphatic*, in which there is easily seen a full, soft, and rounded form, characterized by a fair skin, light hair, languid circulation, and general fullness of the nervous system, together with inactivity and a tendency to fat.

2d. The *Sanguine*, in which there is a florid complexion, expanded chest, general vivacity of disposition, quick conception, showing the preponderance of the vascular system, and known generally by the term of plethoric or full habit, the circulation of the blood being very full and strong.

3d. The *Bilious*, in which the muscular system predominates. The body is remarkable for a compactness of fiber, indicative of strength and activity, and determinateness of mental character.

4th. The *Nervous*, or *Melancholic*, presents indications of inordinate and irregular activity of the brain and nerves, with great susceptibility of impressions, which betoken the predominance of the nervous over all the other functions; and the countenance is apt to be overcast with gloom and thought, alike expressive of anxiety and affection. The temperaments are often so blended together that it frequently requires much discrimination and attention to become con-

versant with the bodily condition of the patient, as during the course of a disease, the person affected not unfrequently presents more or less of each variety of constitution.

In the management of these various peculiarities of temperaments we should direct our attention strictly to the prevention of every exciting cause.

1st. The lymphatic should restrain the appetite and stimulate the muscles, heroically abbreviate sleep, keep alert to duty, avoid warm slops, and as a general rule prefer a dry and rather animal diet.

2d. The sanguine should aim at steadying the attention by moderation in all things, especially his expectations, for his tendency is to overlook immediate danger, and to indulge his natural appetites, without the perceptive and discriminating powers of reflection. In the warmth of conviviality, such a man forgets that fear which would be his safeguard, and with a hearty laugh he invites the evil spirit, concealed in the wine cup, or in plainer language, the use of spirituous liquors, "to steal away his brains," and lead him to destruction. How often we have seen a sanguine youth reduced to a wretched lymphatic, nervous, or melancholy man, by tobacco, cigars, and dissipation!

3d. The fibrous man is a choleric or bilious character, and his temperament is accompanied by that energy of thought and feeling which distinguishes the races formed by the mixture of the Celt, the Saxon, and the Roman, and which is about to command the world. Such characters, however, are apt, in endeavoring to master others, to enslave themselves; and, with imperious determination to obtain a position, they frequently so devote their energy to business as to sacrifice health. Probably the genuine Jew is the true type of this temperament; for he, though conquered, is never quelled; he sifts the dust for gold, and looks to the Highest out of the grave. Free living, stimulants, and spices tend to render a man of the bilious class an abomination, where he might be a blessing. Being constituted for labor, both of body and mind, he is required duly to proportion the exercises of both, and to employ that kind of ailment or food which he finds invigorating without producing undue excitement. With the help of moderation, such a man is likely to lead a long and useful life; but without good principles, he is more apt to become a Shylock than a Daniel, with an artful face and cruel temper, rather than a good complexion and wise heart.

4th. The nervous man is already diseased; he has an over-active brain that is apt to work the more it needs rest. The duty in his case is to divert the mind by employing the muscles, and to soothe the sensibilities by engaging the senses. Let him seek society, and

solace himself by quietly trying to improve it. Let him feel that there is neither hurry nor permanent shade in the heavens about us, and that darkness is only to refresh us for the light. Let him invigorate the digestive functions by avoiding anxious study, by breathing the free air, by brisk exercise on the hills, by riding on horseback, by light, yet nourishing diet, by abstinence from Tea and Coffee, and, in a few words, by attention to all that common sense and physiology teach us concerning the propriety of preserving the balance between thought and action, the use of the muscles and the business of the brain; for certain habits and dispositions of mind, such as melancholy, care, dejection, fear, anxiety, faint-heartedness, and in particular, avarice and hatred, which are hostile to life, claim a distinguished rank among those means which tend to shorten it.

GENERAL RULE OF PREVENTION.

Although the Creator has made a law adapted to the continuance of the human species, he has appended to it some limitations and exceptional clauses for our instruction and benefit; therefore, it is right and proper that people who are concerned in them should know them, and avail themselves of the end for which they were divinely instituted. If properly understood and adopted as a general rule, it would save thousands from immense physical and mental suffering. Instead of there being so many born of nervous temperaments, drunkards, with a host of other evils which I might name, who are degrading themselves, their parents, and mankind, a race would be rightly sent forth which would be much easier trained and educated, and whose influence and example would elevate the sinking standard of humanity, and promote the physical, intellectual, and moral redemption of the world. The evil influence of the female mind on her reproductive system, at the time of impregnation, is remarkable. Grief, fear, excitement, nervous affections, anger, melancholy, jealousy, and any unusual excitement, will, in most instances, have a decided influence upon her offspring, and though comparatively unperceived by those who have not examined into the nature of this influence, yet it is certainly so, and the consequences are beyond the power of pen or tongue to depict. Many thousands are indebted to their parents for all of these peculiarities. Then, as you value the happiness of your children and the blessings of Heaven, avail yourselves of a knowledge of these hurtful influences, or you may find occasion for repentance when it is too late to make amends. The fact is, there is a great sympathy between the female mind and her reproductive system. The offspring, while in its fœtal state, receives an

impress from the maternal mind, which, though it afterward be modified, can never be wholly eradicated. It there receives a mental and moral mold, the great outlines of which can not be obliterated. We see in the same family very different traits of character among different children. One is all affection and cheerfulness; the second, full of excitement and anger; the third, sensitive and nervous. Trace the history of these back to their fœtal state, and the influences to which they were then exposed by the immediate operations of the mother's mind, the causes of these differences will then appear. As I have before remarked to you, while the paternal influences give the first outlines of character, the immediate maternal influences give the smaller peculiarities. Deformities of physical structure are not unfrequently produced by some sudden impression being made on the mother's mind by the unexpected appearance of some frightful or disagreeable object. This sympathy is also manifested in the effects of sudden emotions and particular appetites. Many illustrations of this kind might be adduced, together with cases of a mother's marks, in proof of the great sympathy between the mother's reproductive system and the state of her mind.

In this work, it is my intention to present the simple unvarnished truth, so that my readers can easily understand the influence the mind exercises over the physical and nervous system, and the consequences resulting from the various enslaving appetites, and the destructive influences and prostration of the nerves by a direct violation of the laws of Nature, destroying the beautiful work of the Creator in the functions of organic life.

Of all the disorders which affect the human frame there are, perhaps, none which exert so extensive an influence, and at the same time are so little understood, as the whole class of Nervous Diseases. This ought to be less matter of surprise, when it is considered that they are not confined to the body, but invade the province of the mind itself; and while they often constitute distinct disorders, known by a train of symptoms peculiar to themselves, they likewise form a considerable part of many other disorders, and sympathize with all the changes to which the body is liable from age, from climate, from indulgence, from exhaustion, from joy, or from distress. Their effects, as might be supposed, are hardly less various than their causes. It would be difficult to define or explain, unless in a general manner, the various causes of these nervous affections. In fact, what we consider as morbid sensibility, is but an excessive or irregular action of one of the most engaging constituents of human nature. What would be the condition of mankind without hope, without fear, without interest in prospect or in possession? Life itself would be a burden,

deprived of this source of animation. But, delightful as this faculty is, it requires, like all our energies, to be restrained within certain bounds, and regulated by proper adjustment, that all parts of the frame may act in harmony. Were men convinced that their health and comfort were so materially dependent upon the regulation of their own minds, they would be more careful to strengthen them by study, moderate them by reason, and confirm by religion, and reduce them to an equanimity not easily disturbed by the crosses and accidents of life. It is from the want of this right judgment of things, that people work themselves up to a state of great misery at the merest trifles. Half the evils of life are inflicted by ourselves. In a commercial country, men are often at the mercy of the winds and waves, and the failing of some speculation, or disappointment of a cherished hope, has brought some to destruction and death. This is the effect of not seeing things in their true light; of setting a greater value upon riches, honors, or power, than they deserve; for these things, when they have been made undue objects of desire, absorb, as it were, all other considerations, and fill the mind with false hopes and fears, the very fuel of insanity. It is no wonder that the failure of an object that engrosses all a man's thoughts, should upset a mind unguarded by the security of right reason, undisciplined in moral virtue and unsupported by religious faith.

Nervous irritability, irregular sensations, uncontrolled impressions, unfounded uneasiness, and restlessness, qualms, misgivings, and despondency, will sometimes take possession of the mind in spite of our better reason, and throw a cloud over our fairest prospects. Tears will flow, and laughter will break out, unprovoked by sorrow or joy, arising from that fluttering state of animal spirits, which is known by the name of Nervous. If these effects be more common in females than in men, we see a deeper dejection in the latter, filling them with unfounded alarms, either disqualifying them altogether for domestic business, or obliging them to pursue it in heaviness or heartlessness.

The grandest view we can take of man and woman, is to see them, like some fair vessel, proceeding steadily through the ocean of time, their sails being impelled by the feelings and passions of a well-ordered mind, and their irregular excitements controlled by the ballast of a sound understanding, while the judgment sits at the helm, with eyes fixed on the compass of reason and religion.

NERVOUS DEGENERATION.

THE nervous system is liable to undergo degenerative, and especially fatty degenerative changes, from habits wherein idle and luxurious modes of life are combined with excessive indulgence in rich foods.

There is often too great a desire for excess of food, thus taxing too severely the digestive organs. In this way several varieties of injuries are inflicted. Some only affect the digestive surfaces and the skin, the former perhaps showing itself in a stomach cough, or in a difficulty of swallowing, or in constipation, and the latter in exhibiting some marked cutaneous eruptions, or an inflammatory affection of the eyes, etc.

There may be induced disease from actual quantity of food taken, though it may have been of the simplest and purest kind. There may come the same results from the richness and variety of foods consumed on a single occasion, or on a series of occasions, following in close connection, and these may be seriously aggravated if, in the banquetings, wines and strong drinks, which are not foods, form portions of the so-called entertainments.

There are hosts of people who are never free from dyspepsia, because, as Dr. Abernethy used to remark, "their importations have glutted the market," by their feasting each day at the dinner table.

Persons who feed luxuriously are subject to degeneration of the nervous centres and of other organs, under which they become universally diseased, so that they are affected in every vital part, and thus, under the merest accident of acute physical or mental disturbance, may be brought low.

Such persons often die prematurely of some disease of the secreting glands or digestive organs, which have been worn out before the rest of the body has reached its decline. An excess of flesh-forming foods causes the heart and connecting working muscles to increase in size, and the kidneys to become overtaxed in disposing of the products of decomposition which can only be eliminated by them.

Excessive fat-forming substances cause deposites of fatty material, and so to changes and degenerations varying in degree from simple obesity to muscular inactivity and to fatty muscular deterioration, in which the heart more readily partakes than any other of the muscular organs. More mineral food than is necessary to build up the harder tissues of the body, must be eliminated also by the kidneys and other excreting surfaces, to their great injury.

The nervous system shares acutely in the degenerative changes which follow the reception of an excess of food. The nervous functions are impaired, and degenerative changes occur in the nervous matter, whereby the life forces may be reduced to the lowest degree consistent with living action.

Treatment.—Avoid Coffee, Green Tea, and ardent Spirits; the constant use of which, and Tobacco, are slow but certain poisons at last. Regular exercise is indispensably necessary; it braces the nerves, gives a firm tone to the muscles and other solids, and carries an even flow of comfort and cheerfulness throughout the entire system. With respect to sleep, the want of due rest wastes the strength, debilitates the body, and

especially destroys the nerves. Avoid all sudden changes or transitions from one temperature to another, and be cautious of damp feet, as they are an exciting cause of Nervous Affections, and not unfrequently produce Fever. Long indulgence in mental labor or intense application of the mind, exhausts the nervous system and lays the foundation of a relaxed or weakened brain.

Simplicity of diet is very important. There can be no doubt that two-thirds of the Nervous Diseases are caused by unnatural stimulus, or from too luxurious a style of living. I need hardly remark, that when the stomach is in a sound state, and digestion is properly performed, the spirits are good, and the body is light and easy; but when that important organ is out of order, a sense of languor and debility, with lowness of spirits, watchfulness, or troublesome dreams, nightmare, and a host of nervous disorders, are the consequences.

To eradicate or remove some of the most severe Chronic Complaints, the manner of living should be properly regulated. Some patients require a milk and vegetable diet, while those of a weak and poor habit of body, animal food, which contains a greater quantity of nutriment in a given bulk, than either vegetable or farinaceous substances.

Avoid all hot drinks; they are unnatural to man, as well as to all other animals; they relax the nerves of the stomach, heart, and general system, and produce numerous diseases in those who have them already weak. Avoid especially scalding Coffee, Tea, and many other hot drinks, which ruin the stomach, destroy the nervous system, produce palpitations of the heart, and occasion an abundance of other mischief.

Then, let me urge upon you, particularly, one of Nature's best remedies, pure Cold Water; it acts as a tonic by strengthening the whole system internally as well as outwardly; it passes off gently through the different excretions, as the perspiration, the urine, by stool, etc. I believe that Nervous Complaints generally can be permanently cured by the use of Cold Water; or greatly ameliorated or soothed by Cold Bathing, properly used. From this mode of treatment I have seen many cures effected, that were considered beyond the usual mode of treatment, as Judge McKinly, of Louisville, Kentucky, with hundreds of other cases of long standing, that could be enumerated, who have been relieved and restored to health by the exclusive use of the Water Cure. Water was the drink provided by the beneficent Creator for our first parents in Eden; and throughout the Scriptures we find the most powerful evidence that it should be preferred to all others.

Notwithstanding that theory and practice have demonstrated, in every possible way, that Water is best, yet the majority of mankind have yet but a faint idea of the extent of its salubrious effects, when taken in proper quantity internally, or applied in different ways externally.

When we recommend Cold Bathing, many begin to make objections against it, as if it required a great deal of preparation, or more or less complicated apparatus. What is called the Hand Bath, may

be taken by any one, and in all circumstances. If you have a bowl of water, remove your clothing, and apply the water to your whole body with a sponge or towel; then, with a coarse, dry towel, rub well until the friction gives you a fine glow over the whole surface of the skin; or, if preferred, this friction may be produced by the hand or a brush. You may have the water colder or warmer, as suits your convenience; though most persons prefer it quite cold. They are less chilled by the process than if the water is warmed; and here are all the mysteries which necessarily belong to the mysterious process. Thus, you see, while you would make Cold Bathing a more or less complicated process, it may be made very simple; nor does it absolutely involve the loss of much time. No one can have any excuse for neglecting it, who can get a basin of water and ten minutes' leisure, as nothing can exceed the value of the Cold Bath in procuring relief in Mental and Nervous Disorders.

It has been generally believed that Nervous Complaints are rarely permanently cured; but that their symptoms may be occasionally ameliorated or soothed, and the sufferer's existence made more comfortable and endurable. Now, I am fully convinced by experience in such cases, that if the patient will only be regular in this mode of treatment, and give Nature time, there will be no doubt of great relief, or a thorough cure obtained.

All who have ever tried it are familiar with the bracing effects of Cold Bathing, and the soothing influence of the Tepid or Warm Bath, after a day of fatigue and toil; it quiets the nervous system, and when taken at night, is one of the best and safest anodynes for domestic practice. It may be taken night and morning with great advantage, either cold, tepid, or warm, as it may best agree with the patient. The Tepid or even Warm Bath, to some constitutions, is the most soothing or tranquilizing to the nervous system; but I have found the Cold Bath decidedly the most invigorating or strengthening; and is, in fact, the only form which may, with any propriety, be called a *tonic*. Nothing contributes more effectually than cold bathing and quick friction, or rubbing over the whole body, to the free circulation of the blood, producing a full, bright, and ruddy skin, which is ranked among the surest tokens of health; the spirits feel buoyant and lively, and there is a consequent disposition to quick, cheerful, muscular motions and pleasurable sensations. But I need not further dwell on what will be so apparent to all. Then, give up your fears and prejudices against this invaluable remedy, and try gradually, by first using the water moderately warm, until the system, by degrees, becomes accustomed to the Cold Bath, and you will find its wholesome influence increase the appetite, tranquilize the nervous system, and restore the general health.

Let all who have weak nerves rise early and take exercise before breakfast, as indulging too long in sleep debilitates and relaxes the body. Exercise in Nervous Disorders is equal, if not superior, to medicines. Every thing which has a tendency to divert the mind, by change of place and sight of new objects, very materially aids in removing these complaints. Hence, traveling, visiting strange coun-

tries, towns, and attractive scenery, with exercise as much as possible in the open air, on horseback, in open carriage, and sometimes on foot, will be found highly beneficial. Regular bathing, so as to keep the skin in a healthy condition; daily exercise in the pure, free air of heaven; lively, genial conversation; attractive scenery, interesting sights, and other healthy "food for the mind," will cure nearly every Nervous Complaint. Of course, in specific cases, it will be necessary to make use of specific remedies, which will be found under the proper heads.

NEURALGIA.

NEURALGIA is an extremely painful affection of the extremities of the nervous fibres, occurring in some constitutions with periodic regularity, and much influenced as to its occurrence by conditions of the weather. The pain is sharp and piercing during acute paroxysms, and dull and wearing after the acuteness of the attack has subsided. The pain usually is felt to be pulsating, throbbing, and often simultaneous with the arterial pulse. Near to the affected part muscular startings are also manifested.

Five recognized varieties of neuralgia are known as *Tic Doloreux, or Facial*—in the face; *Brow Ague, or Hemicrania*—in the head; *Sciatica*—in the sciatic nerve of the leg; *Pleurodynia*—in the pleural membrane of the lung; *Stump*—in the stump of an amputated limb.

During the period of pregnancy of women neuralgic pains of a very acute kind are of common occurrence. They come on without warning, are excessively painful and pass away often in a moment, affording no reason for coming or going; of these there are three varieties, named after the part affected: *Odontalgia*—in a tooth; *Cephalalgia*—of the head; and *Mastodynia*—affecting the breast, perhaps the most intense of all, but happily less frequent. To these may be added *Gastrodynia*—stomach neuralgia.

In most instances I have observed this disease accompanied with marked constitutional or local ailment. The exact nature of Neuralgia is obscure; it is, however, certain that some of the most intractable cases have been derived from hereditary causes, and especially those of a peculiar nervous temperament. The laws which regulate the entailment of disease by hereditary descent, and what connection exists between the mind and the brain, or how the sentient being perceives impressions through the nervous system, it is not our intention or our province to notice here. There is a limit to human investigation, as there is to human ambition. Wherever the natural inquirer directs his eager flight—whether to the anatomy or physi-

ology of animal or vegetable life — whether to the chemical attractions and repulsions of matter, or to those regions on which the eye of the astronomer lingers with untiring gaze and ceaseless wonder, he still meets with that line drawn, as a barrier, between the field that falls within the legitimate survey of the physical inquirer, and those unknown regions destined only to be revealed by their Author, our Heavenly Father, in the final recapitulating chapter of His mysterious operations. It is not permitted to finite intelligence to solve the great problems of Omniscience. Hereditary descent is one of the principal causes which give rise to Nervous Diseases; it may be traced in every form of insanity, from wandering intellect to the most furious maniacal paroxysms, and in those scrofulous affections which accompany families through successive generations, sometimes overleaping one, but probably never becoming completely obliterated until the race is extinguished.

The exciting causes of Neuralgia, or Nervous Diseases, are, especially, damp and cold weather, or damp alone, if combined with malaria, such as cause Ague; exposure to currents of cold air, especially if the individual is over-heated, excited or fatigued. In this way railroad traveling has proved a fertile source of Neuralgic affections. Debility of constitution renders the individual much more susceptible to these and other exciting causes. It has often, too, been traced to anxiety of mind, which is well known to have a most powerful influence over the nervous system. Nervousness is a term usually applied to an indefinite something — a mixture of mental and bodily disorders and irritability, generally the product of weakness.

Females are much more liable to nervous disorders than males, independent of hysterical affections, which constitute one of the most marked phases of these maladies, and many of the remarks on which apply to the present subject. In Nervous Diseases there is usually great susceptibility, as before remarked, to external influences, and at the same time mental emotions, whether of joy or grief, fancied or real, exert much influence over the body and its functions. The heart palpitates, the hand trembles, and the face flushes under the most trivial excitement. Much of this is undoubtedly due to constitutional organization, but it is also greatly increased in debilitated states of those who have never been what is called "nervous" from impaired health, or from habits of intemperance.

The temporary relief to nervous sensations which is afforded by alcoholic stimulants, or, in plain language, spirituous liquors, is very apt to lead those who suffer from such sensations, to put too much trust in, and to resort too habitually to, the use of stimulants — a prac-

tice which must be followed by the most pernicious consequences, and has led its thousands to ruin.

I have been frequently inquired of by patients concerning neuralgia, and I have invariably answered that "Neuralgia occurs oftenest in men, of great muscular power, who have been in the habit of exerting themselves freely, and at the same time tasking their viscera with high living and venereal exhaustion — circumstances most likely to create irritation in the viscera, and to render the spinal cord and its nerves the parts susceptible to a morbid sym pathy. But this malady, or disease, is also observable in persons who have over-worked their brains to the detriment of their stomachs, which they at the same time worried with stimulants. On these grounds, we find more of the disease among those who have overtaxed their minds by business and great anxiety to accumulate riches, disappointed politicians, hard drinkers of the ardent, dyspeptics, and excessive users of tobacco. Among women, it occurs in those whose deeply feeling minds have trenched upon the integrity of their viscera; or in those who have strained the latter by rapid childbearing and prolonged nursing of their children." When once this disease is fully established, it is generally worse in the spring than at other seasons. Stormy weather, at any period of the year, exasperates it.

Certain nerves of the body are more liable to Neuralgic disease than others; and these have been written and spoken of as distinct diseases. To the neuralgia of the nerve, whose branches come out of the bone above the eye-ball, under the eye, and in the lower jaw, sending branches to the whole side of the face, and to the teeth, the specific term of Neuralgia or Tic Douloureux is usually applied. When the large nerve which runs behind the hip-joint down the back of the thigh is affected, the disease is called Sciatica. But Neuralgia also occurs, and indeed is pretty frequent in the nerves of the arm, especially of the fore-arm. As a transitory sign of Dyspepsia, it is often felt in the fingers, in the shoulders, and in the ribs. I have seen cases of Neuralgia where every principal nerve in the body was attacked in the course of twenty-four hours — one, that exposure of the hand out of a glove for five minutes caused exquisite pain. It is vain in our present knowledge of the nervous system to speculate as to the cause why one nerve, rather than another, becomes the seat of morbid sympathy and pain. It is, however, evident that derangement of the liver is connected with Sciatica; that nervous disorder of the stomach itself is mostly found with Neuralgia of the face; and that when irritation of the womb is superadded to that of the stomach, Neuralgia or Tic Douloureux of the Scalp, or Nerv-

ous Headache is the most common result. The peculiarities of the nervous habit, as I have already observed, are so very opposite, that the best advice that can be given to a nervous invalid is to avoid those articles which evidently disagree with the stomach, and not to oppress or over-stimulate it with too great a quantity of those which do agree. So far as a general rule can be laid down with respect to diet, etc., a nervous patient should be as competent to judge as the most experienced physician. As I have before told you, moderate exercise is necessary to keep up the functions of the viscera, and that should be preferred which pleasantly engages the mind and keeps it as free as possible from over-excitement. Pleasant relief may be had in agreeable society, and by traveling in countries which afford a variety of scenery, avoiding marshy parts — the vapors of which are very apt to disturb the nervous system, particularly of Rheumatic and Asthmatic subjects.

In closing this important subject, I must make one remark, that this enemy of human life, Intemperance, has dreadfully increased; and that the degree of civilization, luxury, refinement, and deviation from nature, in which we at present live, by so highly exciting and stimulating our existence, has been very destructive to human life. We shall find, on examination, that men appear, as it were, to have anxiously studied how they might entail on their posterity the greatest possible amount of bodily and mental suffering; seldom, if ever, heeding the admonition of our Heavenly Father, "I will visit the sins of the parents upon the children to the third and fourth generation."

Treatment. — The fact of Constipation being a forerunner of a variety of Nervous Affections, as Neuralgia, Nervous Headache, Epilepsy, Hysteric Fits, St. Vitus' Dance, Asthma, Palpitation of the Heart, Indigestion, and Coldness of the Extremities, forcibly points out the necessity of attending to the state of the bowels.

Those of a nervous temperament, who are more or less subject to Neuralgia or Nervous Affections, should avoid exposure to atmospherical changes, especially north-east winds; for the effect of changes in the wind, from the west or south to the east or north-east, and in the temperature and density of the atmosphere, on some nervous subjects, is very remarkable. I have frequently known asthmatics, in particular, prognosticate, by their feelings, a change in the weather a day or two before it took place, although the state of the wind, temperature, and density of the air, at the time, indicated no alteration, apparently being in the state they had been for some days. People who have lost a limb can foretell an unfriendly change of weather by spasms in the muscles that had been divided or wounded, and the motion of the muscles is evident to the eye.

Those involuntary actions of the muscles prove that the changes

interrupt the equilibrium of action between the nerves and muscular system by disturbing the nerves. In an epileptic subject, an unfriendly change will bring on a paroxysm, while the effects from mental agitation on nervous persons, and those affected with Neuralgia, are so well known, by experience and observation, as to require no farther remark. It is, therefore, incumbent on persons of morbid temperaments to acquaint themselves with the peculiarities of their own constitutions, and so adapt the various remedies used as to allay the nervous excitement peculiar to their constitutions — for some have more difficulties to combat in obtaining relief from nervous troubles, than others.

The class of remedies capable of allaying nervous irritation, and invigorating or strengthening the system, are very important — such as regular and sufficient exercise in the open air, in good weather, on foot or horseback, diet properly adapted to the stomach, strict attention to the bowels, cleanliness of the skin, and cold bathing. The producing cause, whether excessive mental exertion, sedentary employment, late hours, or excess of any kind, must, of course, be modified as much as possible.

The Shower Bath is a valuable and often a useful remedy in these affections; but some persons are so nervous that they can not bear the shock. When this is the case, a cold or tepid douche down the back does much good, particularly if there be any tenderness of the spine on pressure — a fact which should always be investigated in those who suffer much from nervous diseases, as this symptom very often exists and is overlooked. When the tenderness is at all marked, which can be easily known by pressure down the spine or backbone, the darting pain or nervousness will be greatly increased, indicating the necessity for special treatment by counter-irritation, etc.

The soothing effect of Hot Fomentations at night, and the Cold Bath in the morning, with friction (by which is meant, rubbing the whole body well with a coarse towel), will greatly relieve distressing nervousness, until gradually a very important change will be effected throughout the whole system. In females of delicate constitution, or in that period connected with what is called, in females, "change of life," and the usual monthly irritation of the womb, the Warm or Tepid Bath, with friction, will, in most cases, greatly relieve the sensitiveness of the nervous system during these "changes." With but few exceptions, I have generally found that Hot Fomentations, in the treatment of Neuralgia, afford relief.

I feel assured, from a long experience, that much depends, in the various diseases, on the digestive organs, which, in plain language, means a proper regulation of diet — as, for instance, the Nervous Headache, or of the face, which is the daily torment of thousands, is produced by visceral irritation and a disordered state of the stomach. Sometimes a good sharp purgative will cure the patient at once, but more frequently it is necessary to follow up the purgative with tonics, and especially with quinine, a mild purgative being also given every few days.

The treatment, then, of Neuralgia, is, in a great measure, dependent upon the exciting causes which have induced the troublesome affection.

Sometimes local irritation of the system runs so high as to render the use of an article of the class of remedies termed sedatives necessary — medicines that quiet the nervous system; such as Opium, Hemlock, Belladonna, Camphor, Castor, Valerian, strong Poppy Tea, and Morphine. As anodynes, the Morphine and Belladonna and Stramonium are the most effectual. One of them should be given just before an expected attack, which generally comes on in the morning, and repeated once or twice till the pain is mitigated or relieved. These articles should be used both externally, and in the form of washes and poultices, and internally in the form of pills, powders, and tinctures, which may be prepared by a druggist. Blisters and Setons are often used in these complaints. Stimulants and Tonics must be used as the occasion and nature of the case require. Cathartics or Purgative Medicines relax the system and lessen the pain. The Hot Bath, hot fomentations of Hops applied to the affected part, usually afford relief; and Hot Drops, which can be obtained at any drug store, will be found a good remedy.

In severe cases of Nervous Disease, a few drops of Laudanum or Morphine are the most certain to moderate the painful feeling of the mind. All kinds of Spirits are bad, and should never be used, unless to obviate some sinking of the system which can be relieved in no other way. To produce sleep, the Laudanum or Morphine should be taken in the day-time, at least four hours before the usual bed-time. Probably the best and most appropriate anodyne for this disease is the Valerian, when obtained fresh and of a good quality. An even tea-spoonful of the powder is about the ordinary dose. It should be taken once in two hours through the day. An ounce of it may be steeped in ½ pint of water, and 2 table-spoonfuls taken every two hours.

The Cicuta is likewise equally beneficial, and by some preferred to the Valerian. One grain of the extract is the ordinary dose, given three times a day.

The nerves sometimes require to be strengthened by the use of Quinine, the rust of Iron, or the mineral acids. The Rust of Iron, or Griffith's Mixture, which can be obtained of an apothecary, is one of the best tonics.

In Neuralgia, as a tonic, I have always found the Quinine one among the most valuable and safest remedies, combined with Morphine — 2 grains of Quinine with ⅛ or ¼ of a grain of Morphine, once or twice a day, as this sedative may be required.

The dose of Morphine is from ⅛ to ½ grain; one-sixth of a grain is equivalent to a grain of Opium. I mention this particularly, because in all cases where it would be proper to give Opium as a sedative, the Morphine may be used, as many persons, with whom Opium disagrees, can take Morphine without any unpleasant effects. It may be taken in a pill or a powder, whichever is preferred. As local or outward applications, Chloroform, Liniment, Spirits of Hartshorn, Cold Water, and warm fomentations of Hops, are the best that can be used.

SCIATICA.

THIS is but a species of Neuralgia, which attacks the nerves in or about the hip, and is to be treated in a similar manner to other forms of Rheumatism and Neuralgia.

Treatment. — Externally, suitable Rheumatic Liniments are to be used. For Sciatica, the following will be found efficient: Take Alcohol and Oil or Spirits of Turpentine, each, 2 ounces; Oil of Hemlock and Chloroform, each, 1 ounce; Gum Camphor, ½ ounce. Apply to the part and rub in well, two or three times a day. The same will be good in case of Lumbago. Other liniments, such as are recommended for Rheumatism, Neuralgia, and Nervous Pains, may also be used, if this is not found sufficient.

Internally, the patient should first take an active Vegetable Cathartic, such as the Podophyllin or other Cathartic Pills; then follow, as soon as the physic has operated, with some good Rheumatic Alterative, such as the Tincture of Guaiac, Poke Root, Prickly Ash (bark or berries) and Black Cohosh Root, equal parts, say 1 or 2 ounces of each, to be taken in doses of about 2 tea-spoonfuls, three or four times a day. Or make a Bitters of these articles: say 1 ounce of Gum Guaiac, and about 2 ounces each of the others, bruised and put into 1 quart of good Whisky; after digesting a day or two, take ½ a wine-glass two or three times a day. Pills composed of Macrotin, say one dram, made into thirty pills, with sufficient of Extract of Poke Berries to form a pill mass, and one pill taken night and morning, will also be found an admirable remedy, especially in Sciatica, and all Nervous Rheumatisms. See also among "Medical Compounds" for other Rheumatic remedies.

Steaming the parts or the whole body over a hot decoction of bitter herbs, will be good; and use the Vapor Bath occasionally, where convenient. Indeed, the Steam or Vapor Bath, in some form or other, is one of the most important remedies in all Rheumatic affections.

NERVOUS WEAKNESS — NERVOUSNESS.

NERVOUS WEAKNESS, Nervousness, Nervous Prostration, and the like, are terms usually applied to an indefinite affection or condition of nervous irritability and weakness — a mixture of mental and physical disorder, which is usually but the product or result of general weakness. The active countryman, the farmer, the hunter, the common laborer, and those who take much exercise in the open air, do not suffer from this nervous debility and weakness. It is usually those of sedentary habits, who are confined to the house and

the office — those who exhaust the brain by too great mental exertion, or the body by idleness and dissipation.

Females are much more liable to nervous disorder and weakness than males; and this, too, aside from or independent of hysterical affections, which also constitute one of the most marked phases of the present complaint. Hysterics are only one of the phases or conditions of Nervous Weakness.

In this Nervous disorder there is usually great susceptibility to external influences; while at the same time mental emotions, whether of joy or grief, fancied or real, exert great and marked influence over the body and its functions. The heart palpitates on slight emotions, the hand trembles, and the face flushes under the most trivial excitement. The person exhibits various other symptoms and evidences of great nervousness or weakness of the nervous system, upon very slight causes apparently, such as would not be noticed in a person of strong, sound general health of body and mind. The affection, indeed, is very nearly akin to Hypochondriasis, and should, to a great extent, be treated as such; it is essentially a disorder of weakness, and is relieved by whatever increases, temporarily or permanently, the power of the Nervous System.

Treatment. — Alcoholic Stimulants and Opiates are used to a great extent, by both males and females, for relief in this condition. They undoubtedly give temporary relief; but they should not be relied on, nor indulged in to too great an extent, or they will do more harm than good, and create a habit which will be worse than the disease itself. They should be used with caution, and never continued long at a time. Their relief is only temporary.

Exercise in the open air will be one of the most useful means in overcoming the complaint, and gradually restoring the nervous power. Walking, riding on horseback, and any kind of out-door work which the patient can do, and especially ordinary farm work, will be good. If the patient be a female, she must determine whether it would not be better for her even to engage in out-door exercise, even farm work, than to suffer for years, and then finally die, long "before her time," from Nervous Weakness and Debility, brought on and continued by effeminate habits, idleness, and the exclusion of sunshine and pure air. The farmers' daughters, who are in the habit of doing a fair share of out-door labor every day, do not often suffer from excessive weakness of the Nervous System, nor general prostration.

The Shower Bath will also be found of service. Some persons, especially delicate females, can not stand the shock of the cold Shower Bath; when such is the case, the water can be tempered to suit, gradually using colder each time, until it can be borne. The application also can be graduated, so as not to produce too great a shock. Or the Douche or Pouring Bath can be used, especially down the back, along the spine; for it will very often be found that the spine is more

or less affected in this complaint, and may, in reality, be the direct cause or seat of the difficulty. Hence, the spine should be carefully and closely examined, by pressing with the thumb or fingers along down from the head to the lower extremity, and if a tender spot is found, a strengthening or Irritating Plaster should be applied, and allowed to remain for a week or two, until a thorough counter-irritation has been produced. This should be continued according to circumstances.

Attention must be paid to the bowels and the skin. The bowels should be kept regular, by, if necessary, an occasional dose of laxative or mild Cathartic medicines or pills; and the skin kept in proper condition by washing or bathing once or twice a week with warm Lye or Saleratus Water, and then rubbing well with coarse dry towels. If the weather is cold, wear flannel next to the skin.

In addition to all this, some good Tonic and strengthening Bitters should by all means be taken, and continued for a good while, it may be for months. This is a complaint or condition of the system which is not to be overcome or cured in a week, or even in a month; it must be done gradually. A very good preparation for Bitters is as follows: Take Cherry-tree Bark, Dogwood Bark, Poplar Bark, and Sassafras Bark — about a handful of each, cut up into small bits — to which, add about an ounce of Chamomile Flowers; put the whole in a vessel and pour on boiling water enough to cover, and let stand over night; then put the whole in a bottle or jug, and add a quart of good Whisky or Brandy; also, an ounce of Carbonate of Iron, ½ an ounce of pulverized Cloves, and 1 or 2 grated Nutmegs. Then take of this, two or three times a day, an ordinary dose or swallow. If the person can not take the Whisky or Brandy, Port, Catawba or Madeira Wine can be used instead. There may be various other Restorative Bitters prepared — all more or less good. The Carbonate of Iron should always be used, however; and if you can get some Ginseng, Spikenard Root and Lady's Slipper or Valerian, an equal proportion of them might be put in with advantage. They are especially strengthening to the nerves, and are also valuable in case there is any cough, or difficulty with the lungs. But remember that out-door exercise, and plenty of it, must be the principal means of cure.

GIDDINESS — VERTIGO.

VERTIGO, OR GIDDINESS, called also Dizziness, is very often symptomatic of some other disease, as Hysterics, Dyspepsia, over-determination of blood to the head, foul or sour stomach, and may be a premonitory symptom of Apoplexy.

SYMPTOMS.— It consists of what is called a "swimming in the head;" every thing seems to the patient to go round; he staggers, and sometimes is in danger of falling.

Very little danger attends the complaint, unless it be caused by too great a fullness of blood in the vessels of the brain. If this be the case, it should be attended to in time, or it may terminate in Apoplexy or Palsy. When Giddiness arises from some disease, it will disappear by the removal of that disease. In females, it often proceeds from difficult or obstructed Menstruation.

Treatment.—First ascertain the cause of the difficulty, and then remove it. If it be a mere symptom of some other disease, that should first be removed. If a primary affection, seated in the head, or is from a disordered stomach, a purgative should be given, and repeated occasionally. The Mandrake or Mayapple, especially if the brain be the seat of the complaint, will be the best for this purpose. An occasional Emetic may also be given with advantage, especially if the stomach be out of order. The feet should be bathed frequently, and rubbed well. Equalize the circulation, withdraw the blood from the head to other parts of the body, keep the bowels open, the stomach cleansed, and the difficulty will soon disappear.

FAINTING, OR SWOONING.

FAINTING is too common and too well known to need any description. It is produced by various causes; among which may be named great loss of blood, and in some persons the sight of blood; violent passions of the mind; severe pain and suffering; excessive joy; disgusting sights; fright; excessive eating and drinking; offensive odors; impure and confined atmosphere; and intense study. It is also a symptom of other diseases, particularly of the heart and brain. Persons of weak and delicate constitutions are liable to it from very slight causes. If it occur frequently in a person otherwise apparently healthy, and without any known cause, a diseased state of the heart or brain is to be apprehended.

Treatment.—A person who has fainted or swooned should be immediately laid in a horizontal position, the clothes about the chest and neck loosened, and cold water sprinkled freely in the face. If the Fainting has taken place in a tight or crowded room, the patient should be immediately removed to where there is plenty of fresh air. The hands, legs and arms should be freely rubbed.

Spirits of Ammonia, or the Salt of Hartshorn, should be held to the nose. The Hartshorn, or "smelling-bottle," is a very good thing in such cases; and ladies who are subject to Fainting spells, generally carry it with them.

A tea-spoonful or two of Compound Spirits of Lavender, with some Spirits of Hartshorn, is very good, to be taken internally.

There should be about four times as much Lavender as Hartshorn, or in about that proportion. A tea-spoonful of No. 6 is also good. It may be diluted with a little Brandy, or other Spirits. But in a majority of cases, pure air and a little cold water in the face, are all that will be required.

Persons subject to Fainting should avoid all crowded assemblies, and places where the air is impure or confined. They should also avoid mental excitement, too much fatigue and tight-lacing.

PALSY—PARALYSIS.

PALSY has its seat in the nervous system, and is characterized by a loss of the power of motion or of feeling in the part affected, and sometimes both. The most usual form of Palsy is that where one side of the body is affected. It sometimes seizes the lower extremities, or all below the hips. In the former case it is called Hemiplegia; in the latter Paraplegia. When confined to a particular limb, or set of muscles, it is called Paralysis or Partial Palsy.

SYMPTOMS.— The symptoms of Palsy are generally palpable enough, and not easily mistaken. It is apt to come on very suddenly, with an immediate loss of sensibility and the power of voluntary motion in the part affected. Sometimes, however, it is preceded by a numbness or coldness, and perhaps slight convulsive twitchings, and other symptoms similar to those which precede Apoplexy.

Sometimes the disease will go off spontaneously, with a Diarrhea, or Fever. A feeling of returning warmth, and slight pricking pain in the part, with returning sensation and power of motion, may be regarded as favorable symptoms.

CAUSES.— Palsy may be occasioned by any thing that prevents the flow of the nervous fluid from the brain into the organs of motion, as tumors pressing on the spinal cord, or nerve; pressure from dislocations and fractures of bones; and by disease or wounds of the nerves. The long continued exposure to the influence of certain sedative agents, as the handling of white lead, exposure to the fumes of metals and minerals, will also produce Paralysis. It is also symptomatic of other diseases, as Worms, Scrofula, Syphilis, Apoplexy, or may follow them as a result.

Treatment. — It is not often that we can do much for the Hemiplegic or Paraplegic form of the disease, if it is of long standing especially where both motion and sensation are gone. Yet in the early stage it may often be cured by proper treatment.

At the commencement, if the attack has been sudden and violent, pursue the same course as directed in Apoplexy.

There will probably be spasmodic symptoms, violent twitching or contortions of the muscles, perhaps of the face. For this, and to allay spasms and pains, give the following: Sulphuric Ether and Tincture Lobelia, of each 1 ounce; Tincture Cayenne and Laudanum, of each ½ an ounce; mix, and give a tea-spoonful every ten to thirty minutes, until the spasms subside. The back and spine should be well bathed and rubbed with stimulating Liniment, or Cayenne and Vinegar, and the same should be applied to the parts affected, using brisk friction with the hand. As soon as urgent symptoms are allayed, other treatment must be employed.

1st. Evacuate the bowels. It will generally be necessary to make use of injections, for the bowels are usually much constipated, and sometimes the lower portion of the body is so paralyzed or torpid that purgatives will not act upon the bowels. It is not best to wait for a purgative to act, for it may be that the Constipation of the Bowels is the principal cause of the difficulty. A dose of some active purgative may be given, such as the Anti-bilious Physic, or Senna and Salts, and then give the following by injection: Pulverized Lobelia and Cayenne, each a tea-spoonful; a table-spoonful of common Salt, a gill of Lard, or Castor or Sweet Oil, and a pint of Boiling Water. As soon as cool enough, give half of it, by means of a large syringe, and the balance after the first has passed away. This will excite an action in the bowels and induce evacuation, if any thing will.

2d. Purgatives must be given every two or three days, such as the Anti-bilious Physic, or pills made of the Extract of Mandrake and Cayenne; or the Podophyllin and Leptandrin may be used. These last two are concentrated preparations — the first made from the Mandrake or Mayapple Root (Podophyllum), and the other from the "Indian Physic," or Black Root (Leptandria), and may be found in most of the drug stores. From one to three grains of each, combined, will be a dose for a grown person. They are both valuable remedies in many diseases.

3d. The patient should also take the following Nervous Pills: Extract Hyoscyamus, 40 grains; Extract Aconite, 20 grains; Macrotin, 20 grains; make into 20 pills, and let him take one every night and morning. The Macrotin is also one of the new concentrated remedies, made from the Rattle Root or Black Cohosh (Macrotys), and may always be found along with the Podophyllin and Leptandrin, or may be had of any Eclectic physician.

4th. Some good Tonic bitters are also advisable, such as the following: Take the roots of the Indian Hemp, called also Bitter Root (Apocynum Cannabinum), Milkweed and Prickly-ash Bark — a handful of each; bruise, and add a pint of boiling Water. When cold, put all into a jug or bottle; add a pint of good Whisky, and an ounce of Carbonate of Iron. Take half a wine-glassful of this three times a day. A handful of the Lady-slipper Root would be a good addition. The Indian Hemp alone is an excellent remedy in all paralytic affections. An infusion made of an herb called Fever Few, tc

be drank freely, cold, is also a valuable remedy in this disease, as well as in St. Vitus' Dance, and such like Nervous Affections.

The extremities and parts affected, should be sponged once or twice a day with Cold Water saturated with Salt, and rubbed well. Attend well to the skin and general system. Any slight attack of Palsy will yield readily to the foregoing treatment, unless the patient be very old and feeble.

PALPITATION OF THE HEART.

SOME persons are very subject to Palpitations of the Heart, which is often brought on by sudden mental excitement, over exertion, as running up stairs, sudden fright, or being in a damp, cold room, and the like. It may be owing to general Nervous Debility, or may be merely symptomatic of Dyspepsia, or some other disease, and is sometimes a symptom of Disease of the Heart.

In a majority of cases, perhaps, a fit of palpitation may be stopped by the person lying down upon a bed, on his back, and inhaling the lungs full of breath, so as to expand the chest as much as possible. A few full inhalations, allowing the breath to escape gradually, will generally be sufficient to stop it. Should that fail, the following

Treatment will generally give immediate relief: Take Tincture of Castor, Sulphuric Ether, and Compound Spirits of Lavender, each, 1 ounce, or equal parts. Dose: A tea-spoonful every five or ten minutes, till relief is obtained. Or, take some Brandy or other Spirits, with a little Cayenne Pepper, Number Six, or Tincture of Cayenne in it, and 10 to 20 drops of Laudanum. This will act as an immediate stimulant and diaphoretic, throwing the blood to the surface, filling the capillary or small blood-vessels, and thus relieve the pressure of blood upon the Heart. It generally gives relief in a few minutes.

Tincture of Stramonium and Digitalis mixed in equal parts, and ten to twenty drops taken two or three times a day, is a good remedy for persons subject to Palpitation — especially if it depends upon any functional or organic Disease of the Heart. If upon Dyspepsia or General Debility, proper measures must be adopted to remove the cause. Tonics, Nervines, and Anti-Dyspeptic remedies must be used, while the patient, at the same time, should avoid, as much as possible, all exciting causes.

ASTHMA.

ASTHMA is an affection of the chest, known by the patient's distressing difficulty, almost amounting to inability, of breathing, or power to inspire sufficient air to fill the lungs. Asthma, although

a nervous or spasmodic affection, is very frequently connected with actual changes in the lungs themselves. Asthmatic Fits, or Paroxysms, come on at regular intervals. For several days, or rather nights, successively, the patient is regularly attacked; then a considerable time may elapse before he or she again suffers. Some persons are never entirely free from the complaint; for there is generally some slight oppression of the breathing, liable to be increased or aggravated by slight causes, such as changes in the weather, peculiarity of situation, errors in diet, anxiety, fatigue, mental excitement, etc., many of which induce or bring on a paroxysm of Asthma in the predisposed. The Asthma generally attacks the patient at night after the person has retired to rest; but it sometimes comes on in the day-time. A want of breath is commonly the first notice which the person has of its attack; he is compelled immediately to rise up in bed, when he feels great oppression, tightness across the chest, and a want of more air; the breathing becomes laborious, accompanied with a wheezing noise, which can generally be heard over the whole room; and speaking is very difficult. There is often a disposition to cough. Frequently, from want of breath, the lips and face become a purple color. Notwithstanding, however, the frightful appearance of the countenance from the disease, it rarely, if ever, proves fatal. The patient feels a choking sensation, but toward morning the breathing becomes more free, and the sense of suffocation gradually passes off. Frequently, a little phlegm or mucus is coughed up; this affords relief, and then the exhausted sufferer falls asleep. In most cases of this disease, the pulse is frequent and small, and there is considerable heat and desire for drink; the urine, in the beginning, is pale and increased in quantity, but, on the fit subsiding, becomes high-colored and deposits a sediment; and the face becomes generally pale and shrunk. Confirmed Asthmatics have a distressed cast of countenance, and acquire a peculiar rounding or elevation of the shoulders perfectly characteristic. Asthma may occur at any period of life, but is more general about middle age. Men are more commonly the subjects of it than women.

This disease, though a very distressing one, is not dangerous in itself, further than as it tends to lay the foundation of other affections of the lungs or of the heart. I have known many persons laboring under this complaint remain comparatively free from distress during the day, but as soon as night approached, the wheezing, suffocation, sense of tightness in the chest, and difficulty of breathing, returned, and continued as long as they did the night before. When there has been a considerable respite during the day, some little sleep may be obtained in the fore part of the night, but morn

ing generally brings back the suffocating oppression of the disease; continuing in this manner, generally, for three or four days before much relief is felt. The sooner expectoration commences, the shorter will be the continuance of the disease. Relief is quite certain as soon as a free secretion of the mucus of the lining membrane of the lungs takes place. The Asthma then gradually goes off. Every day, as the expectoration increases, the disease subsides, growing less violent every night until it entirely disappears.

Where a person has once, however, been the subject of this disease, he is sure to be more or less tormented with returns of it through life. In some instances of this complaint, there will be no expectoration of phlegm. In such cases it is called the Dry Asthma. Where the disease is resolved without the mucous secretion, such instances are called Spasmodic Asthma. In Asthma there is generally some degree of fever, which is shown by the tongue being furred, increased heat, thirst, and loss of appetite. In many instances of this disease, persons afflicted will be about their usual occupations, through the day, and feel nearly as well as usual; but suffer severely with these paroxysms during the night.

Many persons are born with a predisposition to this disease, in the same way that many are to other disorders. Sudden suppressions of the perspiration is probably the most frequent cause. Cold and wet feet; damp rooms; exposure to the changes of the atmosphere; and all excesses in eating and drinking, will produce this disease. The disturbance of the passions and feelings, also produces it. Some persons experience a return of it every fall, on the appearance of cool weather and frost; others will have it in the spring, and others again in the summer-time. Either cold, heat, or moisture, appear to produce it equally alike.

Treatment.—The effects of situation and of atmospheric peculiarity upon Asthmatics, are the most varied; some who are afflicted with this disease, can breathe freely in clear dry air, while others are temporarily relieved by a damp atmosphere, or a warm room. Some individuals, who are never free from Asthma in some situations, lose their attacks as soon as they remove or make a change. These are peculiarities of which all persons who are afflicted with this complaint should take notice.

The habitual Asthmatic, however, soon becomes aware how much his freedom from paroxysms of the disease depends on the state of his general health, and particularly on that of the digestive organs. He can not always avoid atmospherical vicissitudes; but he can, by temperate living, exercise, attention to the bowels, and to the functions of the skin in particular, pass long intervals without an attack. Sponging the chest and shoulders every morning with Cold or Salt Water, and friction being afterward made with a coarse towel or

brush, or a hair glove, is a practice to be highly recommended, provided no other predisposition forbids the use of this remedy.

Asthma is one of those diseases for which much may be done by well-timed and well-directed domestic management, proper care and judgment, attention to the change of the paroxysms, and to the constitution of the patient; likewise to the various remedies adapted to this disease; for what gives immediate relief to one person totally fails with another.

One of the principal causes of this disease, and one that should be strictly guarded against, is external cold, that unrelenting enemy to the nervous system. As cold proves hostile to all nervous parts, so it is found to be in an especial manner most inimical to the chest.

In the treatment of Asthma, the exact nature of the case must be determined; that is, it must be known whether the difficult breathing is the result of disease of the heart or a simple uncomplicated case of Asthma. If the former, the ordinary remedies for Asthma will be of no use whatever, but in such cases the treatment must be directed to the relief of the heart trouble.

For ordinary cases of Asthma, when a fit comes on, the administration of fifteen drops to a tea-spoonful of the fluid extract of Grindelia Robusta every two or three hours, and the inhalation of the smoke from burning a mixture of pulverized Saltpetre and powdered Stramonium leaves, commonly called Jamestown or Jimpson Weed, will generally afford very prompt relief. At the same time it is an advantage to bathe the feet in warm water and warm the whole body thoroughly with dry heat.

The condition of the stomach and bowels should be attended to also, for oftentimes a spell of Asthma is brought on by the stomach being overloaded, or becoming sour and windy, and the bowels constipated. A laxative dose of Rhubarb and Bicarbonate of Soda will answer a good purpose, and followed by 10-grain doses of Subnitrate of Bismuth before each meal.

Lobelia is another good remedy to relieve the hard breathing. It need not be given strong enough to produce vomiting, but just enough to produce slight nausea and relaxation. A small dose of opium in some form, say ten to fifteen drops of Laudanum, or $\frac{1}{6}$ or $\frac{1}{8}$ grain of Morphine, may be given and repeated every three or four hours until relief is obtained. A new remedy that has proved efficacious in many cases is Fluid Extract of Quebracho. It may be given in 20-drop doses three times a day, in water. Strong black coffee, without sugar or milk, given as hot as can be borne, and on an empty stomach, is sometimes a good remedy.

The treatment between the paroxysms, with a view of radically curing the disease, should be followed up persistently. The patient should protect himself against cold, and take tonic medicines and the Iodide of Potash in 5- to 8-grain doses in plenty of water or milk, three times a day.

Warm flaxseed tea should be given for drink, or any kind of herb tea made warm, so as to produce a sweat. Warm Lemonade, or Slippery-elm bark made into a tea, and sweetened with honey, promotes the secretion of mucus; or Syrup of Squills given in tea-spoonful doses

every half hour, will generally procure relief, and moderate the violence of the fit.

When Asthma depends upon repletion, an Emetic will then prove very serviceable. When of the convulsive kind, 25 drops of Laudanum, repeated, if necessary, will generally be found effectual. Ether and Laudanum is a favorite combination with our profession: ½ tea-spoonful of Ether, with 20 drops of Laudanum, given in a wine-glass of Water.

In my practice, where the patient's constitution would permit it, I have prescribed the Lobelia Emetic, given at short intervals, so as to produce full and free vomiting.

A most valuable remedy, one which I have used to remove the distressing constriction of the chest and difficulty of breathing, is a mixture of Ether and Tincture of Lobelia, equal quantities; a tea-spoonful to be given in a wine-glass of Cold Water, and, if necessary, to be repeated once or twice in two or three hours. At the same time, give 20 drops of Laudanum; bathe the feet in Warm Water; apply flannels dipped in Hot Vinegar and Water to the chest, and as soon as they become cool, apply again until relief is obtained. As a remarkable proof of what may be done by simple means in relieving many an urgent disease, I have frequently relieved my patients by externally applying to the chest a poultice of strong Mustard, and one likewise over the stomach; for there is a close sympathy existing between the stomach and lungs. I have also used a Liniment which has afforded great relief, composed of Red Pepper, Spirits of Turpentine, Beef's Gall, and Oil, rubbed over the nape and sides of the neck, stomach, chest, and down the spine, or backbone. This Liniment, in a short time, produces redness and heat of the skin in the parts to which it is applied. We have innumerable proofs that Turpentine exercises a special influence over the nervous system, and we know that it is rapidly absorbed by the aid of friction. In this complaint it will be found a most valuable remedy.

A lady who had been afflicted for many years with this complaint, and had tried almost every kind of medicine without experiencing any relief, finally derived great benefit from the following: Take Ether, Tincture of Castor, Tincture of Opium, equal parts; mix them all together. A tea-spoonful to be taken whenever the symptoms are urgent.

Expectorants and sedatives are useful medicines for the relief of Asthma, as whatever conduces to promote expectoration, tends to the amelioration of the paroxysms. Oxymel of Squills is a good expectorant. The Hydriodate of Potash has been found very beneficial in severe cases; it is used in solution—half an ounce of the Potash in a pint of Water—and a tea-spoonful taken two or three times a day, or whenever difficulty of respiration or breathing is experienced.

In relation to diet, Asthmatics should be cautious as to their food, let it be simple, light, and nutritious; avoiding stimulants, with the exception of Coffee. Their rooms should always be well ventilated, and quietude and repose particularly attended to. Avoidance of the sudden changes of the atmosphere should be enjoined. These import-

ant rules, if properly attended to, will be found greatly beneficial, in all cases, to Asthmatic patients in general.

The following syrup is very valuable for Asthmatic cough: Take Elecampane Root, 1 ounce; Comfrey Root, 1 ounce; Spikenard Root, 1 ounce; Hoarhound (the herb), 1 ounce; Wild Cherry Tree Bark, ½ ounce. Simmer in three pints of water down to one pint; strain, and add 1 pound of Brown Sugar; strain again, and add ½ pint of old Jamaica Rum. Take half a wine-glassful morning, noon, and particularly at night, on retiring to bed. This valuable syrup has proved beneficial in hundreds of cases where great difficulty of breathing and cough existed. Warm Milk and Water, drank freely, is frequently a valuable remedy when the fit is coming on, as it will assist in allaying the inflammation of the stomach, and in relieving the bronchial irritation.

ST. VITUS' DANCE—CHOREA.

THIS affection has its seat in the nervous system, and consists in convulsive and involuntary motions of one or more of the limbs. It sometimes affects one side of the face.

The complaint is chiefly incident to young persons, occurring generally between the ages of seven and twenty-one. Girls are more subject to it than boys.

SYMPTOMS. — Chorea seldom comes on suddenly. It is generally preceded by symptoms, varying in duration from a few days to several months — such as coldness of the feet and limbs, a tingling sensation in the parts likely to be affected, heaviness in the extremities, fullness in the head, obstinate constipation of the bowels, difficulty of swallowing, a disposition to gloom, or excessive cheerfulness, and sometimes a remarkable proneness to mischievous conduct.

After a while, irregular muscular twitchings, or spasmodic contractions, are observed in the face, or in one of the extremities. One of the legs will be affected with a kind of lameness, and the patient drags it in an odd and ridiculous manner. Or he cannot hold his arm still, but is constantly throwing it about. When he undertakes to carry food or drink to his mouth he makes numerous singular gesticulations, perhaps, before he can accomplish it. The head sometimes partakes of the same convulsive action.

In severer cases the patient seems to have lost nearly all command over the voluntary muscles. When he attempts to walk, he usually hobbles along in an irregular manner. Sometimes he can neither walk, stand, nor sit still. The hands and arms are often in continual motion, jerking and flying about in every direction. The muscular

contractions of the face are sometimes extremely severe and ludi crous, giving a continually varying expression to the countenance.

In violent cases, swallowing is sometimes impeded, the respiration anxious and irregular, the voice altered, and the power of speech very imperfect. In fine, the muscular system seems to be in a state of revolt, bidding defiance to the authority and commands of the will. It is truly a singular affection!

CAUSES.—This disease may be occasioned by various irritating causes, such as teething, worms, acrid matter in the bowels, repulsion, or driving in of chronic eruptions, as the Itch, or drying up of Scald-head. It also, and perhaps more frequently, arises from violent affections of the mind, as horror, fright, fear, anger, disappointed love, and religious enthusiasm. Suppression of habitual discharges, especially the Menses, may produce it, and in many cases it arises from debility and extreme irritability of the nervous system. It is also said to take place from sympathy, at seeing others affected by the disease.

Chorea, or St. Vitus' dance, is not a very dangerous disease, as it seldom proves fatal. It is not, however, entirely free from danger, as, if continued long, it may run into Epilepsy, and in this way prove fatal, or render the patient miserable for life. It is also apt to injure the mind, if protracted a great while.

Treatment.—The indications of cure are, first remove the exciting cause, and then strengthen the nervous system.

Very often the stomach is in a deranged and irritable state. In such cases give an emetic. It should be composed of equal parts of Lobelia and Ipecac, given with some warm Teas. In a few hours after this give a Purgative, which should be repeated once in three or four days. Half a tea-spoonful of Beach's Anti-bilious Physic, with 1 grain of Podophyllin, will do for a dose. Repeat in six hours if it does not operate. When the subject is a young girl, about the age of puberty, or you have reason to suspect that the development of the Catamenia is concerned, the Podophyllin, or Mayapple Root, in some form, should constitute the principal part of the purgative; and it might be repeated every other day, for a few times. Other means should be used calculated to aid in bringing on the Catamenial Discharge — such as frequent bathing of the feet and legs in warm water; sitting over the steam from bitter herbs; drinking warm, diaphoretic and emmenagogue teas, as Composition, Pennyroyal, or Ginger. A decoction made from the root of the Vervine, is also valuable in all cases of suppressed or retained Menses.

As a nervine and specific in St. Vitus' Dance, perhaps the Scullcap (*Scutelaria Lateriaflora*) is the best. It is an herb that can generally be got at Botanic drug stores. An infusion or tea is to be made of this, of which let the patient drink from half to a pint daily. It

may be drank warm or cold. If you add a portion of the Lady-slipper Root, it will be all the better.

There is also another herb, called Fever Few, which is valuable in this affection. I have known cases where it alone has effected a cure in the course of a week or two. An infusion or tea is to be made of it, and taken same as the other.

Where the disease seems to be owing to debility of the nervous system, some restorative Bitters should be used, such as the following: Take of Comfrey Root, 1 ounce; Spikenard Root, 1 ounce; Columbo and Gentian Roots, of each, ½ ounce; Chamomile Flowers, ½ ounce; bruise the roots, if not already powdered, and cover the whole with a pint of Boiling Water. When cold, put all in a bottle and add a quart of Madeira or Malaga Wine. Add, also, an ounce of Red Oxyd or Carbonate of Iron. Half a wine-glass to be taken three or four times a day.

If the case is a very bad one, the following Pills should also be given: Take Extract of Hyoscyamus, 40 grains; Gum Camphor, 40 grains; Musk, 20 grains. Make into twenty Pills, and give one night and morning.

The Sponge Bath, of Cold Water and Salt, should also be employed, with plenty of friction. Also an occasional Warm Bath at night.

EPILEPSY—FALLING SICKNESS.

EPILEPSY is a disease characterized by paroxysmal attacks of convulsions, with temporary loss of sensibility and consciousness, followed usually with Coma or Stupor. It is one of the most distressing diseases to which humanity is subject.

The disease comes on by sudden paroxysms, or fits, which continue for a few minutes or half an hour, then leave the patient in his usual state, except that he is more or less debilitated and drowsy. This disease is most common among children and young persons, and boys seem to be more subject to it than girls. Its attacks are generally periodical, often monthly, or every new or full moon. Sometimes it occurs much more frequently, and again not so often as once a month. The disease is often hereditary, several persons of the same family being subject to it, extending down through several generations.

SYMPTOMS.—The attack usually comes on suddenly and the patient falls to the ground—hence the name of Falling Sickness. Where the disease has become seated and habitual, the patient sometimes experiences certain warnings of the attack, such as giddiness, dimness of sight, confusion of mind, loud ringing in the ears, sparks and flashes before the eyes, trembling in the limbs, anxiety, drowsiness,

starting during sleep, sullen gloominess, irritable temper, and revery. Some grow timid and cowardly; others spiteful, quarrelsome, or mischievous. But these premonitory symptoms usually last but a short time, seldom more than a few seconds.

Some persons are warned of an attack by seeing specters just before it comes on. Others experience what is called Aura Epileptica—a certain peculiar sensation, which I believe occurs in no other disease. It is a feeling of chilliness which commences in the feet, or legs, and extends gradually up until it reaches the head, when the patient suddenly becomes insensible and falls, or has the fit. In many instances Epilepsy occurs invariably at night, during sleep.

When the patient is attacked, he immediately becomes insensible and more or less violently convulsed. The eyes roll about; the lips, eyelids, and muscles of the face are greatly distorted and convulsed; the patient gnashes his teeth and foams at the mouth; sometimes the teeth are firmly pressed together and the jaws fixed. The face is sometimes pale, but more commonly of a livid, purple color, with a congested state of the veins of the head and neck. Sooner or later these spasmodic symptoms abate, generally gradually, and on coming to himself, the patient feels languid and exhausted, and retains not the smallest recollection of what has passed during the fit.

Causes.—In some persons a hereditary predisposition to the disease exists. Repeated attacks render the patient still more liable to subsequent attacks. It often comes on about the period of puberty, owing, no doubt, to the important changes which take place in the system at that time.

In some cases the disease is what is called Idiopathic, that is, owing to malformations of the skull, depressed bones, or a spongy growth upon the internal surface of the cranium; organic derangement of the brain; congestion or effusion of blood upon the brain.

In others it is symptomatic, owing to intestinal irritation, as from Worms, and other causes; Teething; suppression or retention of the Catamenia; poisons received into the system. Onanism, or Masturbation, is also a fruitful cause of the disease.

Where a predisposition to the disease exists, an attack may be brought on by violent affections of the mind, or of the nervous system; as sudden fright, fits of passion and the like. Blows, wounds, fractures and injuries of the head may also cause the disease.

Treatment.—Very little can or need be done, during the paroxysm, or while the fit is on, except to prevent the patient as far as possible from injuring himself. Every thing should be removed from about the neck.

A great many remedies have, from time to time, been proposed for this disease, and relied on for a time as specifics; but the truth is they

sometimes all fail. Where the disease is dependent on malformations of the skull, or organic derangement of the brain, it is very seldom cured, especially if the patient be past the age of puberty.

Where the disease is but symptomatic, depending upon some other derangement of the system, and not directly connected with the brain, it can generally be cured, by removing the cause, and proper attention afterward to the general system.

A general course of treatment, with particular reference also to the cause of the complaint where it can be known, will be the most judicious.

1st. An occasional Cathartic or Purgative will be proper under any circumstances. And there is none better than the Podophyllum or Mayapple, in some form or other. It is an excellent Anthelmintic, or Worm medicine, as well as a good Emmenagogue; and is also good in all congestions and effusions on the brain, whether of blood or serum. The bowels are to be kept loose, and for this purpose the powdered roots of the Mayapple and Milkweed (Apocynum) may be given together; or they may be reduced to extracts and formed into pills, giving two or three a day, or enough to keep the bowels open; or pills may be made of Extract Hyoscyamus and Podophyllin, and given in the same way; 2 grains of the former and 1 of the latter to a pill, one or two taken daily.

2d. An emetic, composed mainly of Lobelia, should be given at least once a week. The stomach is generally more or less deranged in this disease, either primarily or secondarily; besides, emetics stimulate the liver, pancreas, brain, and the whole nervous system, and promote a healthy action in the skin.

3d. Anti-spasmodics are indispensable. Such as are both anti-spasmodic and narcotic are preferable. The Scullcap, Macrotys, Stramonium and Hyoscyamus, are all good. The Mistletoe has also been celebrated in this disease. A decoction made of the Scullcap and Macrotys (Rattle Root), of each two parts, and one part of the Mistletoe (when it can be had), to be drank two or three times a day, or ½ a pint in twenty-four hours, and continued for several weeks. Also: Take of the Tincture of Stramonium and Hyoscyamus equal parts, mix, and give from 10 to 30 drops three times a day. Commence with 10 drops, and increase 1 drop each dose till you reach 30, or till a slight dizziness is produced, if it takes 40 or 50 drops, and then continue at that.

4th. Tonics.—Great benefit is to be derived in many cases from the use of tonics. There is generally weakness and debility of the whole system, and then the disease sometimes assumes the form of Masked or Dumb Ague. In such cases tonics are indispensable. For this purpose Quinine may be used, made into pills with Extract Hyoscyamus. Let there be from 1 to 2 grains of Quinine to the pill, and give from 3 to 6 a day. Or a tonic and anti-spasmodic Bitters may be used, such as Peruvian Bark, Columbo, Virginia Snake Root, Rattle Root (Macrotys), and Lady-slipper Root, equal parts of each, in Spirits, or Wine. This is an excellent preparation, and may be used freely.

Nitrate of Silver is a remedy highly recommended by many, and no doubt will often effect a cure. If continued a great while, it is apt to show itself on the skin of the face and hands, turning it a blue-black, or dark metalic color. It is given in doses of $\frac{1}{8}$ to $\frac{1}{4}$ of a grain, three times a day — usually in the form of a pill, mixed with Extract Hyoscyamus. Or in the following recipe: Take Nitrate of Silver, 10 grains; Musk, 40 grains; Gum Camphor, 1 dram; Extract Hyoscyamus, 2 drams; make into eighty pills, and give one night and morning.

I will name another remedy which is very simple, but which has been highly spoken of in some parts of France. As soon as a person is taken with a fit of Epilepsy, or as soon after as you can, cover the face with a black silk handkerchief, tying it about the head and neck, so as to cover the entire face, loosely, with but a single thickness of the handkerchief. The patient, it is said, will recover from the attack almost immediately, or it will render it much lighter; and by continuing to do this for a while the disease may be entirely broken up. In some parts of the country, where this remedy is known, men, on seeing persons fall in the street with Epilepsy, have instantly pulled from their own necks their black cravats and thrown them over the face of the sufferers, and produced almost instant relief! It is certainly a cheap remedy, and is worth trying, at all events. A person afflicted with the disease might keep a large handkerchief, or piece of black silk about his neck, so as to apply it himself, on the first indications of an attack; or if he could not, some one that might be near at the time could do it, without much delay. No measure should be left untried because it is simple or ridiculous, that offers to cure so dreadful a disease as Epilepsy.

CATALEPSY.

CATALEPSY is a condition of body wherein the whole frame lies prostrate and helpless—*kata*, down, *lepsis*, a seizure—so that a limb falls back as if relaxed and dead, while consciousness is retained without physical pain. There is no muscular contraction, rigidity or spasm. The respiration and circulation continue the same. It seems to be a sort of Trance or Ecstasy, and may last a few minutes, or it may continue for hours, or even several days.

The attack generally comes on suddenly, without any warning. The patient falls, or becomes perfectly helpless and unconscious, and every part of the body remains in precisely the position it was at the moment of the seizure. When the patient recovers, he has no recollection of what has occurred, and will commence acting or talking at the point he left off when attacked, the same as if nothing had happened. The period occupied by the attack is a perfect blank in

the patient's existence; he does not even recollect that he has been affected.

In most cases, especially if the attack has been of short duration, the patient suffers no inconvenience afterward. Sometimes, however, in protracted cases, there will be some feeling of weight and pain in the head, lassitude, and dullness of mind, after the attack has passed off.

Catalepsy is sometimes complicated with other affections, or may terminate in them, as Chorea, Somnambulism, Hysteria, and even Epilepsy. As a general thing, however, it is not a dangerous disease.

Causes. — Catalepsy may be induced by various causes. It may arise from intense passion; from long and hard study; from a morbid state of the alimentary canal; worms; plethory, and suppression of accustomed evacuations. Persons of a nervous temperament are said to be most subject to it. It occurs most frequently in females, and very often about the age of puberty. Suppression or irregularities of the Menstrual Discharge is one of the most common causes of the disease.

Treatment. — During the paroxysm, Cold Water may be thrown upon the face and body of the patient, and stimulating applications, as No. 6, Tincture Cayenne, or Davis' Pain-killer, made to the spine, with friction, in order to break up the Cataleptic state. If these fail, and the paroxysm seems likely to last a good while, stimulating injections may be administered, such as an infusion of the Composition Powder, or Warm Water, and Oil or Lard, with a little Cayenne and Salt in it, or No. 6.

As soon as the patient can swallow, a brisk purgative should be given, especially where there is reason to believe there are irritating matters in the bowels.

The after treatment should be upon general principles, with a view also to the exciting cause, the constitution, condition, and temperament of the patient. All the secretions and excretions must be regulated, and the stomach, bowels, and skin kept in a healthy condition. Medicines of a restorative, nervine, and sometimes of an anti-spasmodic character, should be given. Sometimes Emmenagogues, or Medicines that will promote the Menses, must be employed. Where this is indicated, a decoction of the Vervine Root should be freely used. It is one of the best remedies for suppressed or retained Menses known. An occasional physic of the Mayapple Root should also be given in such cases, and the feet, legs, and lower part of the body frequently bathed in Warm Water. Moderate diet and free exercise should be observed.

LOCK-JAW—TETANUS.

THIS is a dangerous affection, and consists in a contraction of a part or the whole of the muscles of the body; but more especially the muscles of the jaws.

CAUSES. — It is almost invariably caused by wounds or injuries of the tendonous portions of the body, though sometimes it will arise from any wound, especially in warm climates, and occasionally from other causes. Punctured wounds, that is, such as are made with a pointed instrument, as a nail, are the most likely to induce Lock-jaw. Wounds in the bottom of the feet, or palms of the hands, where the tendons are most numerous, are the most liable to bring it on. Piercing the foot with a nail, by treading on it, is very apt to result in Lock-jaw, particularly if the wound is allowed to heal and close at the surface before it has healed from the bottom. Any wound that injures a tendon, and is allowed to heal at the surface speedily, may induce the disease.

SYMPTOMS. — Lock-jaw sometimes makes its attack suddenly, very soon after the injury; but more usually comes on gradually, beginning with a slight stiffness in the back part of the neck, which increases, rendering it difficult and painful to move the head. Next there will be pain and stiffness at the root of the tongue, rendering it difficult to swallow; tightness across the chest, and pain in the diaphragm, or just above the pit of the stomach, shooting through to the back. Next a stiffness is felt in the muscles of the jaws, and they soon become locked, so that it may be impossible to open the mouth. There may or may not be contractions and stiffness in the limbs and other parts of the body.

Treatment. — 1st. As to preventing its occurrence. No wound, where we have reason to believe the tendons have been injured, especially in the bottom of the foot or palm of the hand, should be allowed to close up and heal immediately; and particularly if it has been made by a nail or other pointed instrument. If it is, it will be almost sure to induce Tetanus. Such wounds should be immediately laid open with a sharp instrument or knife, and some Caustic Potash, or Lunar Caustic applied, to produce a running sore; and then poultice. Probably the best plan, where, for instance, a nail or pointed instrument has been run into the bottom of the foot, is to immediately open the wound a little at the surface with the point of a sharp pen-knife or lancet, and push into it a small piece of Nitrate of Silver (Lunar Caustic), about the size of a grain of Wheat, or even larger, as far as it will go, or a fourth to a half-inch, and allow it to remain, putting a little Shoe-wax Plaster, or a bandage over it. It will smart and burn, but it should be allowed to remain till it dissolves and produces a sore. Then poultice, and keep the wound open and run-

ni[illegible]l it heals from the bottom, and there will be no danger. Where the wound is large, incised, or lacerated, that is, produced by cutting or tearing, wash it, and inject into it a solution of Nitrate of Silver, of the strength of about 10 grains to 1 ounce of Water. The best poultice is made of Weak Lye and Powdered Elm Bark. The wound may also be washed with Strong Lye, or a solution of Vegetable Caustic.

2d. If Lock-jaw has set in, or given symptoms of its approach, give Lobelia and Cayenne. Bring the patient, as soon as possible, under the influence of Lobelia. To break the attack and produce relaxation of the muscles, give strong Tinctures of Lobelia and Cayenne, two parts of the first and one of the latter, in table-spoonful doses. If the jaws are set, and cannot be pried open, open the lips, and pour it down by the side of the teeth, then close the lips, and it will find its way into the mouth and throat, and will eventually overcome the spasm. Repeat this preparation until relaxation is produced. In severe cases, give injections of Lobelia, Cayenne, and Laudanum.

As soon as the spasm is overcome, the patient should be steamed over bitter herbs, or the Vapor Bath, and kept under the influence of Lobelia. He should also drink freely of a decoction of the Nervine, or Lady-slipper Root.

It is also proper to give a Lobelia Emetic, and occasionally a dose of Laudanum. But rely upon the Lobelia; it is the best and safest Anti-spasmodic known.

HYSTERICS—HYSTERIA.

HYSTERIA, or Hysterics, as it is commonly called, is an affection peculiar to females, and is characterized by a sense of suffocation, stupor, rumbling noise in the bowels, followed by the sensation of a ball rising from the stomach to the throat, sometimes convulsions, laughing or crying without any apparent cause, interrupted sleep, sighing, and more or less flatulence.

Symptoms.— Attacks of Hysteria are sometimes preceded by low spirits, anxiety of mind, a flow of tears, difficult breathing, palpitation of the heart, and a pain is felt in the left side of the stomach, which advances upward into the throat, as though it was caused by a ball. Next the patient feels like suffocating, grows faint, followed by stupor, and perhaps insensibility. The body and limbs may be more or less agitated; there may be alternate fits of laughing, crying, and screaming, wild and incoherent expressions, followed by a temporary delirium. The spasms at length go off, followed by belchings of wind, sighing, and sobbing, and the patient returns to

her usual state of health, with little or no recollection of what took place during the fit—feeling, however, more or less pain in the head and soreness over the body. Hysteria fits are seldom attended with danger, and the complaint is never fatal, unless it runs into Epilepsy or Mania.

Fits of Hysterics marked by prolonged and uncontrollable laughing or crying may be best managed by manifesting entire calmness in the presence of the person, or by leaving the individual alone, without other treatment.

CAUSES.—This disorder usually arises from the operation of certain passions upon a feeble constitution. Females, from puberty to the age of thirty-five, are most subject to it. It chiefly affects those of a sanguine temperament, relaxed muscular habit, and great nervous sensibility. It is also more likely to occur to those in whom the Menstrual Discharge is stopped too suddenly, or habitually obstructed.

Treatment.—Not much is necessary to be done during the paroxysm, or fit. The patient's dress should be loosened, so as to allow of free circulation and respiration. Cold water should be sprinkled, or dashed over the face, the body placed in a recumbent position, the head elevated, and free air admitted. The temples, abdomen, and extremities may be rubbed. Do not confine the patient to the bed. Use no more force than is necessary to keep her from injuring herself or the attendants. Allow her as much latitude and liberty of motion as possible.

As soon as the patient is quiet enough, or has sufficiently recovered, the feet and legs should be bathed in warm water, and an Emetic given, of Lobelia, or Lobelia and Ipecac. The object should be to equalize the circulation and allay the nervous excitement.

Should the paroxysms be likely to last a good while, and it is not convenient to give an Emetic, the following Expectorant Tincture may be given, which will soon clear the throat of phlegm, and will often break up the spasms in a few minutes. It is a preparation that should always be kept on hand, as it is good in all cases of Spasms, Convulsions, Suspended Animation, Pleurisy, Hooping-cough, and wherever an expectorant and anti-spasmodic are indicated. To make it, take of Blood Root (Red Puccoon), 1 ounce; Lobelia Seed, pulverized, 1 ounce; Ipecac, 2 ounces; Cayenne, ½ ounce; good Whisky, 1 quart. Let stand a week. Dose: for a grown person, from a half to a table-spoonful, repeated as often as necessary. If the patient can not swallow, the same may be given by injection.

After the paroxysms are over, the patient should take a mild purgative to cleanse the bowels. If we wish to effect a permanent cure, the bowels must be kept in an open and healthy state. A pill composed of the Extract of Mayapple Root, or of the Butternut Bark, with a little Cayenne or powdered Cloves added, may be taken every night, or every other night, or any good Vegetable Pill.

Asafetida is a celebrated remedy in this complaint. Women gen-

erally have an aversion to it on that account. It is a good agent, however, and a pill of it, about the size of a small pea, may be taken once or twice a day.

A mild emetic should be given once a week, composed of Lobelia and Ipecac, with Pennyroyal Tea. Emetics will impart tone and energy to the stomach, liver, and nervous system.

If the patient is feeble and debilitated, some restorative medicine will be necessary, as a Bitters composed of Spikenard, Gentian, Chamomile Flowers, and a little Cloves and Nutmeg, in Wine or Spirits. The patient should be treated kindly. Nothing harsh should be said to her, calculated to arouse the passions or excite the mind. She should exercise often in the open air, never overload the stomach, and use a light, nutritious, but easily digested diet.

MELANCHOLY AND HYPOCHONDRIA.

THESE diseases are so nearly allied that it is often difficult, if not impossible, to draw the line of distinction between them. As the treatment of each is substantially the same, to be varied only according to circumstances and degree of intensity of the affection, I have thought it best to speak of them together, as but different forms of the same disease.

Melancholy is, in reality, the incipient stage, or a mild degree of madness or mental derangement, while it is also the highest degree of Hypochondriasis. Each passes gradually into the other, and they all are liable to terminate at last in complete alienation of mind. Melancholy is purely a mental disease, that is, a disease of the mind, and may or may not be connected with other complaints. The patient shuns society, and seeks to be alone; is low-spirited, fretful, suspicious, and inquisitive; has a distaste for every thing, and every thing goes wrong with him; while the mind is apt to dwell upon some single circumstance, calamity, or misfortune, that which is generally the cause or supposed cause of all his troubles. Indeed, the disease can often be traced to some sudden misfortune, as the cause, such as the death of a friend, or member of the family, disappointed affection, matrimonial difficulty, sudden financial losses, and the like. Some persons seem always to want more room, or more air, and are constantly wanting the windows opened, or prefer to be out of doors, seeming to dread confinement; others are constantly apprehensive of some calamity, or in fear of being taken up for some dreadful crime, or that they have committed some unpardonable sin. So tormenting are these imaginary fears sometimes, that the unfortunate sufferer

seeks every opportunity to end his troubles by self-destruction, or suicide. There may be physical symptoms connected with those of the mind, such as palpitations of the heart, difficult breathing, pallid and haggard countenance, costiveness, suppression of urine, deep sighing, frequent weeping without any cause, and the like.

Hypochondria, on the contrary, is always more or less a disease of the general nervous system, and is often closely connected with Dyspepsia, and derangement of the Liver. Persons of a melancholic temperament are most liable to the disease, especially if of a sedentary habit of life. There is usually great depression of spirits, accompanied with absurd and ridiculous fancies and apprehensions. As in Melancholy, the mind is greatly disturbed, and the person is troubled often with imaginary evils, suspicions, and fear of death from some cause or other. He also believes himself laboring under some disease, or complication of diseases, and not unfrequently has the most ridiculous fancies in regard to the matter. He is also troubled more or less with Dyspeptic symptoms, as sour stomach, belching of acid and corrosive matter, vomiting of viscid or tough phlegm, and coldness of the skin ; sometimes a sort of spasmodic constriction of the throat; pains under the ribs of the left side; palpitations of the heart; wakefulness, and generally costiveness of the bowels; timidity, seriousness, and sad and gloomy forebodings. It would be impossible, however, to enumerate all the symptoms, even of one unfortunate hypochondriac; while with different persons they vary, according to the difference in temperament and ideas, to an almost endless extent. The great leading characteristics are imaginary diseases of some sort or other, fear of impending evils, and a desire to be constantly taking medicine!

This peculiar condition may be brought on by long and serious study, protracted grief, obstruction and inactivity of the liver, intemperance, high living, so as to induce Dyspepsia and derangement of the function of digestion, and by whatever will derange or impair the nervous system. The disease, however distressing to the patient, and troublesome to the physician, is not often attended with any dangerous consequences.

Treatment. — The cure in both these diseases depends much less upon medicine than on the judicious management of the mind, which requires the utmost care and address, as the patients are generally capricious and irritable in the extreme; while the mind also is the seat of the main difficulty. The mind must be diverted from that train of gloomy subjects and apprehensions on which it has been wont to dwell so long, and turned to other objects, new and interesting. The patient should be surrounded with cheerful company, as much as possible, agreeable amusements, interesting scenery, and, where practicable, should travel, visit gay and fashionable places, as well as

wild and romantic; take plenty of exercise, especially riding on horseback; and whatever will be calculated to engage the mind with pleasing and interesting objects. In order to gain the confidence of the patient, and flatter his hopes of a cure, his complaints, though they are but imaginary, should be attended to as if real, and with the greatest care. His medicines should be changed from time to time, as often as he expresses disappointment in their effects. He should be kept taking medicine of some sort or other, though often, it may be, of an innocent character, as long as he wants it, and every wish of this kind should be, as far as possible, and not injurious, gratified. In many cases medicine will be necessary, such as Restoratives, Anti-dyspeptic Remedies, and Nervines; bathing daily should be insisted upon, the surface being well rubbed while drying. The diet should be carefully regulated according to circumstances, and the particular condition of the patient. In general, light animal food will be the best. If there are Dyspeptic symptoms, and there generally are, such vegetables and fruits as easily generate acidity, and flatulency in the stomach, should be avoided. Green Tea and Coffee should be avoided. A good article of Black Tea, not very strong, may be used; also Chocolate and Cocoa, and a little good Claret or Madeira Wine, and occasionally a little good Brandy, but not so as to acquire a habit for them. Opium and Narcotics of all kinds are to be avoided. If the patient has become habituated to their use, he must gradually be weaned from it, or you need not hope for a cure. Sea-bathing is good; but if not that, then the ordinary Sponge Bath, or Shower Bath, every morning, should be one of the essential parts of the treatment, and will be found one of the greatest benefits in all Nervous and Hypochondriac cases.

In the commencement of the treatment it may often be well to clear the stomach with an Emetic, especially where there appears to be an accumulation or tendency to viscid phlegm or sour acrid matter. Purgatives will also be necessary occasionally. Where there is a tendency to Sour Stomach and Dyspeptic symptoms, Alkalies should be used in moderate quantities. Nothing, perhaps, is better than the White or Dyspeptic Lye. (See preparation among Medical Compounds.) A little Saleratus, or Super-carbonate of Soda, is good; also Magnesia, and Prepared Chalk; about 10 grains of Rhubarb, with about a dram (or table-spoonful) of Magnesia, taken once a day, will be found useful, both as a laxative and to correct the acidity of the stomach.

Some good Tonic and Restorative Bitters, to be taken two or three times a day; Anti-dyspeptic or Liver Pills, one taken once or twice a day, with daily bathing, free exercise, alkalies sufficient to counteract the acidity of the stomach, when required, with occasionally some changes and additional remedies of a harmless character to suit the whims and caprices of the patient, will be sufficient, generally, as the medical part of the treatment. The balance of the treatment, and often the main part, will consist, as I have already stated, in the proper and judicious management of the mind, by engaging it upon various objects of amusement, pleasure and interest.

THIRD DIVISION.

GENERAL DISEASES, AND DISEASES WITH CORRUPTION OF BLOOD.

FEVERS.

OF FEVERS IN GENERAL.

UNDER this head are embraced all Fevers by which the human frame is affected. Fevers are very numerous, and arise from various causes, affecting persons of different constitutions more or less violently. This will show the necessity and importance of looking well to the constitution of the person before prescribing remedies. If you employ the same active treatment for a delicate and weekly person, that you would for a healthy, robust one, your patient will sink under the remedies. A long experience in practice has convinced me that the stomach must first be attended to and relieved in the treatment of Fever, and the first impression made upon the stomach by medicine, acts instantly by sympathy throughout the whole system. This is the organ which receives the medical remedies, by which the disease is to be subdued.

The great secret of medicine is to discover the cause of disease; the next is to apply the remedies properly, and the third and last is to watch closely their effects. The practice of medicine is very simple, and founded upon good sense. A fool, with all his theory and learning, will never make a successful practitioner.

As Fever shows itself in various forms, it is important that inquiries be made into the true causes which assisted in producing the disease.

Two very opposite states of the human body are supposed to give rise to Fevers, and to form their great foundation or distinction. The one is called, medically, the *Phlogistic Diathesis*, which means

inflammatory disposition; wherein the heart is greatly excited to quick and powerful exertions, manifested by great strength in the action of the vessels, while the blood itself exhibits a red hue, and a closer texture than usual. In the other, the brain and the nervous system are more directly affected, their power seems impaired, the force of the heart and vessels is weakened, the blood is of a loser texture, and the fluids or juices tend to a dissolution, or a changed appearance.

When the Inflammation or Fever originates from external or outward causes, such as wounds, blows or burns, the Fever that follows which is called the local affection, is in proportion to the degree of inflammation in the part affected. Such Fevers are called, medically, *Symptomatic*. And this is the case in certain disorders of the lungs, and other diseases of the body, which arise, not from external injuries, but from some fault or disease in the part, which gradually brings on Inflammation and Fever. If the local inflammation be removed, or, in other words, health restored to the part affected, the Fever is removed also; if this can not be subdued, but keeps gradually increasing and destroying the organization of the part, the patient dies, sometimes by the violence of the Fever, and sometimes because an organ essential to life is destroyed.

Cold very frequently produces inflammatory disorders, and when of long standing and neglected is apt to settle on the lungs.

During the winter, and early in the spring, Pleurisies, Quinsies, Rheumatisms, and Inflammatory Fevers prevail. Toward the end of summer, and particularly in autumn, Fevers of a different nature prevail, with Dysenteries, and putrid, ulcerous Sore Throats generally make their appearance.

During the summer months, in sultry weather, when the body is relaxed, and when heat and moisture combine to hasten the corruption of animal and vegetable substances, and fill the atmosphere with miasmata, or, in other words, foul air, together with the effluvia of stagnant water, all tending to produce Fever, then Bilious, Intermittent and Remittent Fevers are most prevalent.

But a still more active source of Fevers is produced from the effluvia arising from the living human body, when people in great numbers are crowded together, when the air is deprived of its vital ingredients by repeated and constant respiration, and made poisonous by foul exhalations. Hence this infectious matter will be formed in jails, in the holds of ships, in dirty dwellings, in hospitals, or by the effluvia coming from bodies in a diseased state; and it likewise communicates its infection to those who approach the place in which it is generated. Infections of this kind will remain long ensconced

in beds, blankets, and other articles of clothing, which have been in contact with the patient's body, retaining poison, and capable of infecting others (unless properly cleansed,) should they be brought in contact with them. In this manner have many persons been infected with Fever, by handling or washing the articles, being more or less predisposed to disease. There can be no doubt that some persons will be infected with disease, while others equally exposed may escape.

All diseases of an infectious nature are more or less modified by change of climate, cleanliness, and various other causes acting upon the constitution. Persons who take violent exercise in sultry or hot weather, or who accidentally fall asleep on the damp ground, or are exposed to the beams of the mid-day sun, or to the heavy dews of night, or have the perspiration suddenly checked, are more or less liable to Fevers of an inflammatory and dangerous nature — the inflammation directly affecting the brain itself, or its membranes.

Symptoms of Fever.— Lassitude or weakness of muscular power, accompanied with an expression indicative of some inward distress, and an aversion and inability to every exertion, either of mind or body, usually denote the approach of Fevers. Irregular chills and heats, with great restlessness, and a general sensation of soreness, succeed; while flushing of the face, increased heat of the skin, especially of the hands and feet, quick pulse, headache, or a disturbed condition of the mental faculties, demonstrate that the Fever is already formed, and that medical assistance should be rendered to the patient.

INTERMITTENT, OR AGUE AND FEVER.

THIS is a kind of Fever that comes on periodically, which means at particular times, having a clear intermission or length of time between the fits. This Fever is distinguished by physicians under the following names: *Quotidian*, if the fit returns every day; *Tertian*, if the fit comes every third day; and *Quartan*, if it comes every fourth day.

General Symptoms of Fever.— The Ague commences with weakness, frequent stretching and yawning, followed by feelings of coldness in the back and extremities, which gradually increase until the limbs and body become greatly agitated with frequent and violent shivering. This continues for some time, when a violent pain in the head and back comes on, and a sensation resembling a stricture, or tightness across the stomach, is frequently felt, and the feeling of

coldness is so great that the patient can obtain no warmth. After a short time the feeling of coldness begins to wear off, by degrees, followed by warmth, which gradually increases, until redness and heat, much greater than natural, spread over the whole body, and the patient at length becomes so extremely hot that he is now as anxious for refreshing cold air as he was before desirous to obtain warmth. After these symptoms have lasted for some time, they gradually pass away, the thirst goes off, the skin is relaxed, and a moisture breaks out on the head, which soon becomes general, and profuse sweating soon breaks out over the whole body; then slowly going off, it entirely disappears. These are all the symptoms, or progress, of a regular form of Intermittent, or, in other words, Ague and Fever; then the patient is left, apparently, free from disease, until the next attack, with the exception of weakness and debility. The fits generally make their invasion with a wonderful degree of exactness, at the same hour as the former, and lasting generally about the same time.

Treatment.— For the cure of this disease, whether it is the Quotidian, Tertian, or Quartan, the same plan must be followed — which is, as far as possible, to prevent the disease from becoming habitual; for the longer it continues, the more it weakens the constitution; and if improperly treated or neglected, it is generally followed with serious consequences, disposing the liver, spleen, etc., to obstructions, and frequently prepares the system for Dropsies and other Chronic Diseases.

The first thing to be done for the treatment of the cold fit, is to produce artificial warmth by bathing the feet and legs in hot water, covering the body with blankets at the same time. When in bed and well covered, apply to the feet Hot Bricks, and let a dry heat be likewise applied to the pit of the stomach, abdomen, and along the spine or backbone, and to the hands. Warm drinks should be given freely, such as Sage Tea, Pennyroyal, Balm, weak Red Pepper Tea, etc. In short, during the cold stage, endeavor to produce the hot.

In the second place, during the hot stage, you are to promote, as much as possible, perspiration, which is to be done by those remedies which lower the arterial action, laying aside the remedies used in the first stage, giving cooling drinks, and removing, gradually, the clothing, etc., which greatly oppress the patient at this time.

In the third, or sweating stage, the patient should be kept cool, wiped dry after it is over, the clothing changed, and sleep permitted. When there is much debility or weakness, stimulants should be given, such as a little Warm Brandy, or Whisky Toddy, or Wine and Water.

In the intermission, by which is meant the time between the fits, you are to endeavor to give such remedies as will excite a new action in the system and remove those morbid effects produced by the disease, or, in plainer language, to strengthen the system, so as to prevent a return of the chill and fever.

For the purpose of preventing a recurrence of the chill and fever, medicine must be given during the intervals. The great remedies for this purpose are the preparations of the cinchona bark. The most reliable of these is Quinine. It is best given in doses of three to five grains every three or four hours for grown persons, so that from twenty to thirty grains will be taken during the interval between chills. It is best given in the form of pills or put up in gelatine capsules, but for children, or those unable to swallow pills, it may be disguised to some degree by dissolving it in Syrup of Liquorice.

This is a good formula for an ordinary case of Fever and Ague:—

℞.	Quinia sulph.,	30 grains.
	Piperine,	5 grains.

Mix, and divide into 10 capsules.

One capsule may be given every three hours. This will almost invariably break up any ordinary attack. In obstinate cases, it may be necessary to first give a dose or two of purgative medicine to prepare the system for the action of the Quinine. For this purpose there is nothing better than the Compound Cathartic pills, which can be found in any drug store, sugar-coated.

Two or three of these pills may be taken by an adult or grown person in the morning or at bed-time, and repeated the next day, if a thorough bilious action of the bowels does not result from the first dose. Those who cannot take pills will get a similar effect from the following powder:—

℞.	Podophyllin,	2 grains.
	Leptandrin,	10 grains.
	Powdered Ginger,	10 grains.
	Sugar of Milk,	30 grains.

Mix, and divide into 8 powders.

One should be taken every night or morning until free bilious discharges are produced. For children, half or quarter of a powder may be taken, according to age.

Besides the Quinine, there are other preparations of the Cinchona bark which sometimes effect cures when Quinine fails. Of these I mention the Sulphate of Cinchonia, Cinchonidia and Chinoidine. Larger doses of these are required than of Quinine, and they may be taken in the same way, except the Chinoidine, which comes in a black, hard stick, resembling Extract of Liquorice, and this is easily made into pills about the ordinary size, and from one to three taken for a dose every three or four hours during the intermission.

Among the other remedies for Fever and Ague which are found to be efficacious, I mention one, Salicin, which is the name given to the active principle of the black willow. This should be given in doses of from five to ten grains every three or four hours during the intervals. It can be procured at any drug store. Fowler's Solution of Arsenic is another reliable remedy in old obstinate cases. It should be given with caution, commencing with three-drop doses every four hours, and increasing a drop each dose until seven to ten drops are reached, then decrease a

drop each dose until three drops are reached, and so on, up and down. It may be taken after eating, especially if the stomach is weak, and always in plenty of water.

In many cases the stomach becomes very weak, and unable to bear much medicine or food. In such cases I have found the Bisulphate of Quinine to act better than the Sulphate, as it is more readily soluble. It should be given in the same form and doses as the Sulphate. Persons who suffer a long time with Chills and Fever, and become pale and greatly reduced in strength, are liable to have what is called "Ague Cake," which is an enlarged condition of the spleen. Those afflicted in this way should, if possible, go for awhile to a mountainous region, where Ague never prevails. The medicines useful in such cases are the Cinchona preparations already referred to, in connection with the preparations of Iron. If these fail, the Iodide of Potash in 5- to 6-grain doses three times a day, given in plenty of water, will be useful.

It is important to bear in mind the tendency of this disease to return at certain regular periods. Not only does it return daily, every alternate day or every third day, but, after it is broken up once, it tends to recur every seventh day for two or three weeks, and to guard against this it is well to anticipate its return by taking medicine the seventh, fourteenth and twenty-first days succeeding the last chill. After the third period is passed, the liability to recurrence is very slight.

Having contracted Ague, it is important to attend carefully to hygienic measures, in order to prevent the disease assuming a chronic form. The clothing should be warm, the food nutritious and of the most easily digestible kinds. A fit of Ague is often induced by a too hearty meal or by crude, indigestible articles. Those who have the disease should not be out after sunset in the evening, nor in the morning before sunrise, nor should persons living in an aguish region go out in the morning before they have eaten breakfast or taken some food. The ounce of prevention is always best.

It not unfrequently happens that this disease is protracted, or continued for some time after the use of Sulphate of Quinine, or other tonics, from not previously preparing the system for its use, by giving either an Emetic or some gentle purgative. Where the Quinine fails in subduing the Fever, it is probably owing to the neglect of such precaution. Emetics, given before the fit, have sometimes prevented its occurrence. At the commencement of the chill, a favorite remedy for grown persons is 30 drops of Laudanum, and 30 drops of Sulphuric Ether, in a little Water. Sometimes the Fever will not yield, even when all the preparatory medicines have been employed. When this is the case, you may justly suspect that the liver or spleen is diseased, or both, particularly if the countenance be livid, or pale, or of a yellowish cast. In such cases the Quinine should be stopped for a time, until the obstructions are removed. For this purpose, give to a grown person one or two Liver or Cathartic Pills, such as the third and fourth named on page 1134, or any good Vegetable Cathartic Pill, and continue giving one or two, night and morning, for a few days.

CONGESTIVE CHILLS.

THIS disease sometimes assumes an alarming form, known as the Congestive or Sinking Chill. The cold stage or chill is much longer than previously; the whole capillary system, and small blood-vessels near the surface, seem to be "congested;" the skin is cold, clammy, and pale or death-like, and the patient apparently "sinks," as though death were about to ensue. The exact cause of this form of the disease is not well understood, except that it is probably the same as that of ordinary Chills and Fever, the system only being more thoroughly charged with the poisonous malaria. Congestive Chills seem to prevail in certain districts, and during certain seasons, more than in others.

Treatment.—In Sinking or Congestive Chill, the treatment must be more powerful and energetic than in the common form of the disease; prompt and powerfully stimulating means should be at once adopted. Give immediately two or three large doses of Quinine and Cayenne, with plenty of Brandy; say fifteen grains of Quinine and thirty grains of Cayenne, divided into three powders, and give one powder every hour, with half a tumbler of Brandy; at the same time rub the body of the patient well with Spirits, with Cayenne and ground Mustard added, so as to recall warmth and the blood to the surface. The Warm Bath is also good. Twenty grains of the Diaphoretic Powders, or of Dover's Powders, should be added to each of the powders of Quinine and Cayenne.

The remedy of greatest importance in these cases is the Quinine, and sometimes it will have to be given in large doses, say ten to fifteen grains every fifteen to thirty minutes, until three or four doses are taken, and reaction begins to be established. To promote its absorption, internal and external stimulants are employed to remove congestion. The Cayenne, above named, is a good remedy; but in severe cases the following preparation is recommended: Take Oil of Cajeput, 2 drams; Oil of Anise, 1 dram; Alcohol, 2 ounces. Give in teaspoonful doses every five, ten, or fifteen minutes. In some cases, we prefer the Vapor Bath to the use of stimulant frictions. Take three or four bricks, heat them so they will vaporize water, but not burn the clothing, wrap them in four or five thicknesses of flannel, previously saturated and wrung out of Vinegar, to which a small portion of Cayenne has been added, and put them around the patient in bed, his clothes being loose.

After the chill has been overcome, and reaction takes place, treat the same as an ordinary case, while the Fever lasts. When that is over, and during intermission, give Quinine, in pills or liquid, as for an ordinary case of Fever and Ague.

The Black Snake Root, generally called Virginia Snake Root, and Wormwood, which grows in every garden, made into a tea, I have

used with great success in curing this disease. A grain or two of Quinine may be added in cases requiring more active treatment.

Parsley as a Remedy.—Two physicians of Paris have published a memoir, the object of which is to make known the immense resources which the Healing Art may draw from the seed of Parsley. This common and indigenous plant possesses incontestible febrifuge qualities or properties. A decoction of its seed may be substituted for the Bark of Cinchona, and the active principle which they designate, under the name of Apiol, is equal to Quinine in the treatment of local Intermittent Fevers.

DENGUE, OR BREAKBONE FEVER.

THIS is an affection which has prevailed in certain localities in this country, in an epidemic form, at several periods. The first description of an epidemic of this disease is given by Prof. Dickson, as it occurred in the year 1828.

The commencement of the disease is much like most fevers—that is, with chilliness, loss of appetite and sometimes vomiting, langour, headache, etc., followed by light fever. The fever may last but a few hours in mild cases, or it may continue three or four days. During the fever the pains in the head, eyes, muscles of the neck, the back and limbs, are excruciating, so that the name, breakbone fever, seems quite appropriate. After a few days the fever sometimes returns for a short time, but with less severity. There is generally an eruption accompanies this fever, which in some cases resembles that of scarlet fever, in others it is more like measles. Bleeding from the nose, mouth and bowels sometimes occur.

The disease attacks all classes and ages. The epidemics do not generally last long, but sweep over the country and expend their force in a few weeks. It is more liable to occur in warm climates. Although it is so severe, it seldom proves fatal.

TREATMENT.

The disease being self-limiting the treatment must be directed mainly to alleviating the intense suffering. The application of heat in the form of the hot air or vapor bath, or, in the absence of these, dry heat to the extremities and spine by means of hot bricks, bottles filled with hot

water, etc., will palliate the pain. Dover's Powders in 8- to 10-grain doses will relieve pain and promote sweating; a mild purgative may be given in the beginning, and followed by 3- to 5-grain doses of Quinine; Belladonna in 5- to 10-drop doses of the tincture every 3 hours helps to quiet restlessness and relieve pain. If the urine is scanty and the fever high, the following prescription is excellent:—

Tincture yellow jessamine (gelseminum),	2 drams.
Sweet spirits nitre,	1 ounce.
Water,	1 ounce.

Mix, and give a tea-spoonful every 2 or 3 hours.

While convalescing, care must be taken to avoid over-eating or exposure to cold, or a relapse may occur.

REMITTENT, OR BILIOUS FEVER.

IN this Fever the symptoms vary according to the situation and constitution of the patient, the climate and predisposing causes, or season of the year. It arises, perhaps, from too much bile, or from exposure, derangement of the liver, or from other causes similar to those which produce Intermittent Fever, or Ague and Fever. In Bilious Fever there are remissions, which mean a mitigation of symptoms, or retirement of the Fever for a time, but it continues on slightly until a fresh attack ensues.

In warm climates, however, it comes on more actively, and assumes very quickly, if not arrested, a dangerous form. Like other Fevers, it commences with a sense of coldness and shivering, violent pains in the head and back, spirits low, sickness at the stomach, giddiness or swimming of the head, great weakness of the whole body, and difficulty of breathing: then comes the cold stage, followed by considerable increase of heat, while the pulse, which was small and quick in the cold stage, becomes full, and increases in its quickness.

Pain of the head and back more violent, and the sickness at the stomach increases, with frequent desire to vomit, which at last results in throwing up bile. All these symptoms continue, the skin is hot, and dry, with great thirst, and gradually the skin becomes moist. Shortly after this the symptoms pass off, and sometimes apparently cease entirely.

The patient begins to have hopes of getting well, but in a short time he is disappointed by another attack coming on more violent than the first. If this Fever be not opposed by proper medicines, in

the early part of the disease, it will end in delirium, when great restlessness takes place; the discharges by stool will be very offensive; after which a jerking of the nerves, a profuse clammy sweat, convulsions or contractions of the muscles, and in a short time death ensues. The causes which produce this disease are the same, in a great measure, as those which produce Intermittent, although acting in a more powerful manner.

In the months of July, August, and September, when heat and moisture combine to hasten the corruption of animal and vegetable substances, by impregnating the air with noxious exhalations, this disease prevails to a greater or less extent, according to the season and predisposing causes, all of which have a powerful influence in either mitigating or increasing this disease. A mild form of Bilious Fever frequently attacks delicate persons, and is usually preceded by irregular action of the digestive organs, such as Dyspepsia, Flatulence or Wind, Diarrhea, etc. This is called Gastric Fever, produced by those ordinary evils — cold, damp, and fatigue.

The patient complains of weakness, drowsiness, slight chills, and flushes of heat, but no perspiration; skin hot and dry; thirst; slight sickness at the stomach; total loss of appetite; increase of Fever in the evening, sometimes occurring at noon, and not unfrequently in the middle of the night.

Treatment.—In the treatment of this disease, great care should be taken to direct your attention to the condition of your patient, and the severity or mildness of the attack; for frequently in diseases of the same origin, and in persons very nearly similar, in respect to age and temperament, one would frequently be accompanied with an inflammatory or some morbid peculiarity of constitution, while another will exhibit more of the low, irritable forms, so that the treatment must be varied in proportion to the nature and violence of the attack; for among Fevers are to be found all the intermediate degrees and varieties, from the common Ague to those of the most violent and infectious kinds. If the patient be of a very strong, full, plethoric constitution, with a hard and quick pulse, a deep-seated pain in the eyes, a burning heat at the stomach, and flushed and reddish countenance, indicative of strong inflammatory disposition, early Cupping or Leeching on the temples, and cold applications to the head, will be of much benefit. Under these circumstances, where the headache is violent, the skin dry and hot, and the pulse full and bounding, the symptoms will be moderated by these remedies; but in the absence of these symptoms, use other agents. I have no doubt in many instances, particularly in hot climates, great harm has been done by bleeding to excess. Blood-letting, unseasonably and injudiciously employed, either endangers life, or has a very remarkable effect in protracting recovery, by the insurmountable weakness it often produces. I am now speaking of hot climates, where experi

ence has proved this fact; so much so, that the use of the lancet now is seldom, if ever, required.

Bleeding by cupping or leeching is of very great service, in such cases. This is called Topical Bleeding. It is very useful, and, in most cases, may be beneficially applied where much pain is located, according to the urgency of the symptoms, and the strength of the patient, until their object is accomplished. The best time for the application of these remedies, is during the abatement of the Fever, or when the skin is warm and dry. Remember that no Depletion is to take place, under any circumstances, when we see evident signs of prostration or sinking in the patient.

The use of purgatives, in the treatment of Bilious or Remittent Fever, is of the utmost importance; for the evacuation of the intestinal canal is always the first step to be taken, at the commencement of this disease, and repeated occasionally during its continuance, with care as to the effect produced, increasing or diminishing accordingly. Excessive purgation should be avoided. It is quite enough, as a general rule, that, at the commencement of this disease, two, three, or four consistent stools should be procured during each twenty-four hours, and in the latter part, one or two is sufficient. Should there be, however, any intestinal irritation, great caution is then necessary, and milder laxatives should always be preferred to cathartic or active medicines. In this Fever different combinations of cathartic medicines are used by different practitioners, but nearly all of them make use of some mercurial preparation, either Calomel, Blue Pill, or Cook's Pill (which is composed of equal parts of Calomel, Rhubarb and Aloes), because they are believed to exert a peculiar action upon the liver, and for their value in restoring and correcting arrested or depraved secretions. But these objects can be as fully attained, and generally more successfully, by the use of vegetable purgatives, and hence without any of the bad effects which are so liable to attend the internal use of Calomel, and the different preparations of Mercury. For this purpose, in commencing the treatment, there is scarcely any thing better than the Anti-bilious Physic or Powder, mentioned on page 1137, under the head of "Valuable Compounds;" and to be given as there recommended. The addition of the powdered Mandrake Root, or a grain or two of Podophyllin, to a dose, is advisable. If the Anti-bilious Powder is not to be had, any of the active Cathartic Pills described on page 1134, or any other good Vegetable Cathartic Pills will do, especially such as have the Extract of Mandrake or the Podophyllin in them. A full dose should be given, and repeated once or twice, or continued until bilious matter is freely evacuated, and the discharges become of a natural color. After unloading the stomach and intestines, by two or three brisk purges, on the first intermission of Fever, use the Quinine, by giving 2 or 3 grains every hour during the remission. Some eminent physicians give larger doses of Quinine, from 15 to 20 grains at a dose, repeating if necessary.

I find, however, a very valuable remedy in the following, viz.: 14 grains of Quinine to 1 ounce of Water (which is equal to two table-

spoonfuls), to which add 14 drops of Sulphuric Acid; mix well together. Dose: a tea-spoonful to a grown person every hour during the remission of the Fever.

As a general rule in the treatment of the common forms of Bilious Fever, physicians desire to diminish the intensity of the local congestions and irritations by Depletion and Purgatives, to lessen the general febrile excitement, and to render the remissions more distinct before resorting to the use of Quinine. Other physicians attach less importance to the preparation of the system, and give Quinine on the first intermission. Strange as it may seem, yet the fact is, that good observers are quite as rare as good reasoners in science; there are many, "who having eyes see not, and having ears hear not." Observation is the means of discovering truth. My long practice has convinced me that during Fever there is a necessity of unloading the stomach and intestines, by two or three brisk purges before the Quinine is used. When Quinine is incautiously used, it will render every symptom more violent and prolong the disease. However, if the patient suddenly becomes giddy, feeble, and languid, tonics must be resorted to, such as Quinine, Wine, Porter, and other stimulants, to be given freely, on the remission, otherwise it will degenerate into a Nervous Fever.

Here comes the point for sound judgment not to mistake the debility which arises from oppression, requiring evacuants for an exhausted state of the system, which would do serious injury, and increase the Fever.

Excessive Purgation is now avoided in the Southern and Western States. A full dose of the Anti-bilious Powder, or of some active Vegetable Cathartic Pills, preceded, in bad cases, with a thorough Emetic. Emetics, in this disease, as well as in all Fevers, are of great importance, especially in the earlier stages. The common Emetic Powder (page 1138), is, perhaps, the best. From a long experience, I have come to the conclusion that simple remedies are the best, such as Vegetable Cathartics and Emetics; bathing the feet, legs, and, indeed, the whole surface, with Warm Water, with a little Saleratus or Ground Mustard in it, and the free use of Warm Diaphoretic or Sweating Teas, so as to produce perspiration.

It is always necessary in this, as in all Bilious diseases, to pay strict attention to the bowels. They must not be suffered to become costive, but must be kept open by the use of mild purgatives or laxative medicines daily, or at most every other day, such as Butternut Extract Pills, the Neutralizing Physic, or Senna and Manna, Salts, Cream of Tartar, and the like.

In place of the laxative medicines, it is often well for patients to use clysters or injections made of Warm Soap-suds, or of Molasses and Water and a little Vinegar. The bowels may thus be relieved without the use of purgatives, and the good effects produced by fomentations may be reached.

Diaphoretic or Sweating Medicines are also an important class of remedies in this as in all Fever diseases. They tend to determine the blood and fluids to the surface, to equalize the circulation, and thus

relieve congested parts and internal organs. The Diaphoretic Powders are about the best, or the Dover Powders, aided with Warm Herb Teas, as Pennyroyal, Chamomile, and the like. Emetics relieve Congestion of the Liver, determine to the skin, producing gentle moisture or sweat, as well as carrying off the bile.

The Warm Bath is a very valuable remedy; it promotes insensible perspiration, by relaxing the skin, and taking off the stricture of the vessels; if possible, it should always be used. If a bathing vessel can not be procured, the feet and legs should be immersed in Warm Water, at least once a day. The warmth of the bath should be made always agreeable to the patient. In my practice, I use the Cold Water, by sponging the body with it, adding a little Vinegar. This frequently used, particularly when the Fever is at its hight, and the head much affected, has been attended with the best effects, giving Cold Water to drink, even Ice Water, for this is Nature's remedy, which will not only reduce the Fever, but determine to the surface. In warm climates, I have given the cold affusion by sponging with, or throwing Cold Water over the patient, or putting him into a wet sheet for a few moments, after which rub dry with a coarse towel, and replace in the bed, producing, in a very few minutes, very great relief. Also employ cold applications to the head.

When the inflammatory disposition has ceased, Tonic medicines will considerably hasten the cure; but if used during the Fever, they will render every symptom more violent and prolong the disease.

Columbo Root, as a tea, in this disease, is very valuable; it checks the vomiting or puking so frequently an attendant upon this complaint; it supports the patient's strength, while he is taking such medicines as are necessary to break the Fever and to carry off the bile. As to the vomiting, it is to be variously treated, depending on the peculiarities of habit, etc. In some I have found that the Saline Mixture, the Soda Powders, the infusion of Columbo, a spoonful or two of new Milk, or equal parts of Milk and Lime-water, given every hour, will stop vomiting. When the vomiting is accompanied with a burning sensation at the pit of the stomach, a tea-spoonful of Sweet Oil and Molasses has proved beneficial. Porter, in some cases, affords immediate relief.

Outward applications, such as flannels wrung out of a warm decoction of Chamomile Flowers, or Mint Leaves stewed in Spirits, or equal parts of Sweet Oil and Laudanum, rubbed on the stomach, will be beneficial, and should these fail, put a cataplasm of Mustard, or a large Blister over the stomach.

Should the stomach be very irritable, let the patient frequently moisten his mouth and throat with cold water; he must not drink too much liquid of any kind, or he will continue to vomit; the object should be to keep the stomach as quiet as possible.

In the course of this disease, Headache frequently occurs; when this is the case, apply cloths, wrung out of Cold Water, or Vinegar and Water, to the head, repeated as often as they get warm, until the pain abates, and if it becomes necessary, apply a Blister between the shoulders.

Where the patient is very wakeful and no sleep can be procured, you will find the Warm Bath apt to produce it, but if either of these fail, try a glass or two of Porter, or the Camphorated Julep or mixture, or Hop Tea, or a pillow of Hops. A dose of Laudanum is proper at bed-time, provided there exists no considerable inflammatory symptoms.

A very pleasant plan of treatment in this disease — especially for the sick person, and fully as successful as the proper means usually employed — is as follows: Take a common-sized tumbler two-thirds full of cold water (about 4 ounces), and add to it 20 drops of the Tincture of Aconite Root; give a tea-spoonful every half hour when the fever is highest, and every hour during the remission. Associated with this, use the Alkaline Bath frequently, and when the fever commences to decline, the hot Foot Bath. With the abatement of the fever, give the Diaphoretic Powder in doses of 5 grains ever hour until the skin becomes moist. During the remission, give Quinine to the extent of 10 or 15 grains. In persistent cases, give, in addition, a tea-spoonful every two hours of the following: Acetate of Potash, ½ ounce; Water, 4 ounces.

CONGESTIVE FEVER

Is only an aggravated form of Bilious or Remittent Fever, a form which the disease is more apt to take during some seasons than others. A Congestive state is also sometimes induced by neglect of the disease at the commencement, or by exposure or active exercise, or by improper and inefficient treatment. In the Congestive state there will be great prostration of strength, attended with cold, clammy sweats; coldness of the extremities; irregular pulse — sometimes slow, feeble and impeded, at other times full and bounding — confusion of the mind, Vertigo, Lethargy, and often delirium; hurried and difficult breathing; frequent sighing; haggard and distressed countenance; dull, glassy eyes; tongue covered with a white or brown fur; or if the liver is much congested, the tongue will be red, with a raw appearance, and perhaps cracked and bleeding; the urine scanty and high colored.

The Treatment is the same as the foregoing, only it should be prompt and more vigorous. The patient should be sponged all over with the warm Alkaline Bath, or warm Saleratus or Lye Water, and rubbed well; sponging also afterward with warm Vinegar and Whisky is good, with severe friction or rubbing. Mustard Plasters, with a little Cayenne mixed in, should be applied to the feet, legs, hands and wrists, and a large one over the region of the liver.

Internally Diaphoretics or Sweating Medicines should be given, and as soon as the natural warmth of the body has been restored, give a dose of Anti-bilious Physic, or active Cathartic Pills, enough to act promptly and thoroughly; or a dose of Podophyllin and Leptandrin, from 1 to 3 grains each, according to age. After the physic

has operated, give Tonics, Diaphoretics and Stimulants — continue bathing and friction.

The deficiency or irregularity of heat on the surface is among the first symptoms that indicate Congestive disease; if the skin be restored everywhere to its natural warmth, a cure may soon be expected. Recovery rapidly progresses, if natural warmth be speedily restored and a universal perspiration excited. On the decline of this Fever, patients are apt to crave particular foods and drinks, which should be allowed them, as Nature, in these instances, seems to point out those remedies which prove of the greatest advantage.

In those cases in which the disease ends in the Typhoid state or Fever, which is known by the following symptoms — a disturbed state of the brain and nervous system, showing itself by frequent sighings, wandering delirium, watchfulness, or irregular and interrupted sleep; deranged state of the secretions and excretions, attended with a brown or black state of the tongue, and an offensive smell of the whole body; in this state of the case, you must give nourishing diet and stimulants, such as Wine, Brandy, Porter, and all other things which will sustain the system. Attention must also be paid to the state of the bowels, and their offensive contents, not by active purges, which, in this exhausted state of the system, would kill your patient, but by injections, or by the occasional use of Calcined Magnesia, in small doses alone, or a few grains of Rhubarb mixed with it, so as to act very gently on the bowels.

Be attentive also to remove every thing offensive; have the sheets and linen of the patient frequently changed, and keep the skin clean by wiping the whole body, twice a day, with equal parts of Vinegar and Spirits, or Water milk-warm. By perseverance in the above treatment, I have seen persons recover under the most unpromising circumstances.

I have now given you, according to my experience, the best means of treating this most prevalent and dangerous of all Western diseases. To obviate the attack of Summer and Autumnal Fevers, we should guard as much as posssible against their influence, avoiding a hot sun, and the night air, or checking the perspiration, or intemperance in eating or drinking. Cleanliness, both of person and dwellings, is to be attended to; living temperately and avoiding strictly every exposure, suiting the dress to the changes of the weather. Hard drinking is another cause of disease which should be carefully guarded against in warm climates, particularly by seamen and boatmen, who, of all others, are the most inattentive to health. The same admonition applies to their sleeping on deck during the night; also exposure when overheated, or in a state of intoxication, which, by checking suddenly the copious perspiration, seldom fails to bring on Fever. A proper regulation of diet, by preserving the happy medium between long fasting on the one hand, and immoderate eating on the other, is essential for the prevention of this disease, and the preservation of health.

NERVOUS OR TYPHUS FEVER.

THIS disease is known by various names, according to the symptoms which predominate, as Nervous Fever, Slow Fever, Jail, Hospital and Ship Fever, Spotted or Petechial Fever, Putrid Fever and Malignant Fever. Typhus Fever is also contagious, to some extent, or under certain circumstances. These terms are sometimes also applied to Typhoid Fever, when it assumes a character to justify their use.

It receives its first name from attacking the brain, and the effect it produces on the nervous system. The second, from the slow and gradual manner in which it sometimes comes on. The third, fourth, and fifth, because it is apt to break out in jails, hospitals, and ships, where a number of men are crowded together, and where proper cleanliness and ventilation are not observed. The sixth, from certain spots or pimples, slightly elevated above the surrounding skin, of the size of a pin head, of a bright red or rose color; sometimes there are but very few, principally upon the belly and chest, but sometimes on the face and wrists, and the most usual period for their appearance is during the second week of the Fever; in a few instances, as early as the close of the first week. The seventh derives its name from the putrid state or tendency, supposed to take place in the fluids. The last, from the dangerous nature and malignity of the Fever; they are, however, the same disease, varying according to the violence of the symptoms, and the different constitutions of the patients.

SYMPTOMS.—In this disease, more than in any other Fever, the symptoms vary. It sometimes creeps on in such a slow, secret manner, that the disease will have made considerable progress before the patient is aware of the necessity of using remedies, but on other occasions, it comes on with a greater degree of rapidity. The symptoms are pretty much alike, common to all Fevers; first heat, then cold, or sometimes chilliness followed by heat, want of appetite, sickness at the stomach, and occasional vomiting, followed by some confusion of the head, feeling of weakness, lowness of the spirits, trembling of the hands, frequently sighing without knowing the cause, pulses irregular, sometimes a little faster than usual, and at other times about natural. In some patients a dull and heavy pain in the back of the head is complained of, with a sense of coldness; in others, a pain in one eye.

These symptoms gradually increasing, the pulse becomes smaller, and at the same time quicker, while the arteries of the temples and neck beat with additional force. The patient is generally more rest-

less toward night, the breathing is somewhat difficult, and very little refreshment is obtained from his short and disturbed slumbers. This gradual increase of symptoms, with the peculiar, pale, sunken countenance attending Fever, will give the alarm, even when other Nervous Diseases, with which the earlier symptoms have been confounded, are present. In the progress of the disease, the system is equally affected; for sometimes headache, restlessness, and uneasiness prevail in a high degree, while, at the same time, the tongue is clean and moist; and at other times, while there is no headache, or restlessness, the tongue will be dry and foul, and profuse sweats will break out. This Fever, moreover, is not only thus irregular in affecting various parts of the body, but it is also irregular in its recurrence after the remission; and these, instead of taking place in the evening, will arise often in the morning. Again, sometimes the Fever is very violent for the first three or four days; it then diminishes for a time, and then, perhaps, increases again.

After, or about the tenth day, the weakness increases considerably; the whole nervous system becomes affected with tremors and twitchings; the urine is commonly pale; the fingers are in constant motion; the tongue becomes dry, of a dark color, and trembles when attempted to be put out, and sometimes the gums and lips are covered with a dark, viscid substance. To these succeed stupor, cold, clammy sweats, with a fetid smell, hiccough, and twitching of the tendons, together with an involuntary discharge of the excrements. In every malignant case, this Fever ends fatally on or before the seventh day; but more frequently toward the end of the second week. When the patient survives the twentieth day, he usually recovers. When the Fever terminates favorably before, or at the end of the second week, the crisis is generally obvious; but when that happens at a later period, particularly if after the third week, the favorable turn is less evident, and sometimes several days pass, during which the disease goes off so gradually, that the most experienced are in doubt whether it abates or not. At length, however, it becomes evident by a warm moisture on the skin, by the dark-colored, gluey substance which adheres to the gums and lips, growing less tenacious, and being more easily removed; by the stools regaining a natural color; by the urine being made in greater quantity, and depositing a sediment; by a return of appetite, and by the pulse becoming slower than it was at the commencement of the disease. Deafness ensuing, tumors appearing behind the ears, a red rash, and an inflamed scab below the nose, or about the lips, are also considered favorable.

The symptoms which point out the approach of death, are the dilated pupil, or glassy, staring eye; involuntary, cadaverous smell-

ing evacuations; hiccoughs; cold, flammy, and partial sweats, with a small, weak, creeping, tremulous pulse; anxiety, restlessness, and grassy color of the face, or a sad expression, low muttering, or high delirium; starting of the tendons, quick speech, voice altered, constant watchfulness, with incoherence, stern sullenness, or unmanageable fury of mind, picking of the bed-clothes, blindness, inability to put out the tongue, difficult deglutition, or swallowing, sliding down in the bed, lying on the back, drawing up the knees, insensibility, with a disposition to uncover the breast, or frequent attempts to get out of bed.

The causes which occasion this disease, are impure air, and living on damaged or improper provisions. Although these causes produce the disease, in frequent instances (where it is not epidemic or catching) persons are attacked even in the country with this malady. Filth, a moist atmosphere, much fatigue, cold, scanty diet, depressing passions, excessive study, too frequent use of Mercury, excessive intercourse with women, profuse hemorrhage, or whatever weakens the nervous system, may produce this Fever.

This Fever also arises from Bilious Fever, when of long standing, changing into Nervous Fever. I consider this disease essentially one of debility.

Treatment. — In regard to the benefit of Emetics in this disease, there is some difference of opinion with medical men. They have, however, been mostly used under two circumstances; first, at the very commencement of the Fever, and secondly, when a relapse or aggravation of the symptoms has been threatened, by some intemperance in eating, etc., at or near the time when the patient was about to recover. They were used in Philadelphia in 1836, during the prevalence of this Fever, diminishing the violence of the disease very successfully; if used within the first twenty-four hours from the time of the attack, they generally arrested the disease.

On the first appearance of the symptoms, give 20 or 30 grains of Ipecacuanha, or 4 or 5 grains of Tartar Emetic, either of which may be dissolved in a pint or more of weak Chamomile Tea, letting the patient drink a gill every fifteen or twenty minutes until he vomits freely, which ought to be assisted by drinking warm water.

In the early period of the simple Typhus, giving an Emetic, followed the next day by some active Purgative Medicine, has frequently cut short the Fever at once, lessening its duration and its dangers.

Through the whole course of the disease, the bowels must be kept gently open, so that the patient should, in no case, be more than two days without a stool; for Costiveness is apt to induce an increase of heat, and an affection of the head, as Delirium, etc. — a great deal of feculent matter is produced in Fever, although little food is taken. In administering Purgatives, however, you must be very careful not

to employ them in such doses as will operate severely — for if you do, you may produce great debility, and thereby lose your patient. The object is to procure one or two discharges from the bowels daily; for this purpose, two pills, containing each 1 grain of Podophyllin, 1 of Scammony, and 1 of Aloes may be given; to be followed, after three or four hours, by some mild Purgative Medicine, such as Castor Oil, Salts, Senna and Manna, Cream of Tartar, or Tamarinds; but you are not to purge so as to produce debility, for the danger of this Fever is in proportion to the weakness.

The great point is to support your patient's strength and spirits by a liberal use of Tonic Medicines and Cordials, by which I mean Sulphate of Quinine, Wines, Cordials, etc., which should be early employed. At the same time a nourishing diet should be used, suited to the taste of the patient, and strict attention paid to cleanliness and a free circulation of pure air. While you are supporting the vital energies of your patient, you must take care to prevent feculent matter from being confined in his bowels, by occasionally administering Clysters, if the gentle laxatives have not accomplished this result. The Saline Mixture, given in a state of effervescence every two hours, rapidly abates thirst, and removes the incrusted irritability of the system. The great and important matter in this disease is to support the patient and keep him as strong as may be.

Dr. Gerhard, in his account of the Philadelphia epidemic, in 1836, says: "It is difficult to conceive the extreme prostration in which our patients were left after a severe attack of Fever. The skin was usually cool, the pulse very weak and fluttering, and accompanied by muttering delirium, and great feebleness or weakness. Under these circumstances, Quinine, Wine, and a nourishing diet produced effects which acted like magic." He used about 12 grains of the Sulphate of Quinine in twenty-four hours, given in solution, mixed with cold water, as follows: Quinine, 12 grains; Water, 12 tablespoonfuls. Dividing the time during the twenty-four hours, equally, in administering each dose.

The Doctor said it did not appear necessary that Wine should be given in very large quantities, but varied it according as the necessity of the case required. From half a pint to a pint may be used during the twenty-four hours, depending upon the strength, the constitution, and the habits of your patient, and the benefit derived, as you will easily perceive from their use.

Among the means for restoring, temporarily at least, the exhausted and flagging energies of the system, may be included the external application of dry heat, and Mustard Plasters, to the feet. Dr. Gerhard says of these latter, "They were of great and undoubted advantage in the stage of prostration which occurs at the decline of Fever, and certainly contributed to save the lives of several of our patients." He also found them useful in diminishing the stupor and prostration during the disease, as well as reanimating the strength of patients who were brought to the hospital exhausted or weakened from neglect, or from a fatiguing ride from a distant part of the city. But if the Fever was high, and the skin very hot, the Mustard

Plasters to the feet were not as beneficial as when the skin was cool, and the patient seemed sinking from weakness. Yeast, in this disease, is a valuable remedy. Two table-spoonfuls of Yeast were given to a boy every three hours, which afforded immediate relief, and he recovered very quickly. The same remedy was given to fifty patients, and restored them all.

Whatever may be the mode of action of Yeast in Typhus, the fact appears to be indisputable, that fixed air takes off that extreme debility of the stomach, so conspicuously marked in disorders of this nature; and in proportion as that subsides, the pulse rises, becomes slower and fuller, the burning heat on the skin disappears, and a truce is gained for the reception of nourishing supplies. The most agreeable mode of administering Yeast, is to add two table-spoonfuls of it to a quart of Beer, or Mild Porter, of which a wine-glassful may be taken every hour or two. A most powerful and valuable remedy will be found in Cold Water; the earlier it is used in this disease the better, or as soon after as you have evacuated the contents of the stomach, bowels, etc. In the earlier stage of the disease, Cold Water may be used frequently in bathing the whole body, but later in the disease care must be taken in the use of Cold Water to avoid producing chilliness. Sponging with Tepid Water is always grateful, and generally brings about an abatement of the Fever, followed by more or less moisture of the skin, and then by a refreshing sleep. Bathing with Cold Water may be used at any time during the day, when there is no sense of chilliness present, or when the heat is already above what is natural, and when there is no general or profuse perspiration or sweating.

During the cold stage of the paroxysm of Fever, while there is any considerable sense of chilliness present, or where the body is under profuse sensible perspiration, Cold Water ought never to be employed, as by so doing we might extinguish life. In the advanced stage of Fever, when the heat is reduced, and the debility great, some Cordial, such as Wine warmed, with an addition of Spice, or Warm Brandy, should be given immediately. In some cases, where the delicacy of the system will prevent the Cold Water from being employed, tepid or milk-warm Water may be used, suffering the surface of the body to be exposed occasionally to the air, by this means you diminish the pulse, the breathing becomes easier, and sleep is immediately apt to follow. In the progress of this disease, special morbid symptoms will require especial treatment. Thus, affections of the head, with stupor and delirium, will be relieved by frequently washing the temples with Cold Vinegar and Water, which should be frequently renewed; and if the delirium be accompanied with wildness of the eyes, a Blister must be applied to the head, near the crown.

Where there prevails any unusual coldness in the lower extremities, recourse must be immediately had to the Warm Bath, or to some warm, stimulating applications externally, in order to restore the circulation. The efficacy of the Bath will be greatly increased in such cases, by having it strongly impregnated with Salt, and the patient should remain in it till his skin becomes warm. On being

removed to his bed, he should be well rubbed all over with Hot Flannels, and bottles of Hot Water, or Heated Bricks, with Vinegar poured upon them and enveloped in Flannel, applied to his feet, legs, and under the arm-pits. When a bathing vessel can not be procured, use, as an embrocation, a strong solution of Table Salt, in Heated Spirits, which admirably recalls the languishing circulation to the surface.

Camphor is one of the most useful and powerful remedies when sleep has been interrupted by disturbances of the nervous system, or jerking of the nerves, which is, in many instances, immediately checked by giving an Injection, or Clyster, in which 20 grains of Camphor were dissolved, and give internally, by the mouth, 5 grains dissolved in a wine-glassful of Water, well mixed. This dose should be given every two hours, until it brings on composure of spirits and sleep. In some cases this remedy will exert a perfect control over this jerking of the nerves, and, like most of the remedies of its class, acts as a useful balance-wheel in preserving the harmony of the system, until the disease has passed through its natural course, which is about fourteen days, so that we should assist Nature in all her salutary efforts to overcome this disease.

When there is great restlessness, and the patient exhausted by agitation, and tormented by incessant nervous jerking, you will find a small dose of Morphia, (see table for dose,) or a dose of fifteen grains Bromide of Potash, will calm the agitation and procure sleep. It is not a remedy which should be used in large doses, as patients with Typhus are certainly more readily affected by its narcotic properties, than they are in any other disease.

The diet, when the Fever begins to decline, should be somewhat nutritious and supporting. The contagious character of the disease should be borne in mind. The first precaution is to separate the sick from the healthy, and thus cut off, as much as possible, the intercourse between them. Purify both beds and clothes from every particle of filth; the chambers must be often fumigated with good, sharp Vinegar, or the burning of Tar.

On the first appearance of Typhus, or any infectious disorder, in any place where persons are crowded together, great cleanliness should be observed, and the rooms should be freely ventilated, by the admission of pure air, and the floors washed frequently with strong Soap-suds, and quickly wiped as dry as possible.

As a purifier, the Chloride of Lime is among the best, and may be bought at any apothecary store, with directions how to use it.

TYPHOID FEVER.

THE predisposing causes of Typhoid Fever, are all such as greatly depress the vital power of the system, either temporarily or permanently, and we might say, with truth, that no person, unless origi-

nally of feeble vitality, or laboring under some cause that produces depression at the time of exposure, can have primary Typhoid Fever. It is true, that if the cause acting upon the system is very intense, the disease might be rapidly developed. Animal miasmata is the exciting cause of the disease, and by this we understand animal matter in a state of decomposition. Liebig says: "An animal substance in the act of decomposition, or a substance generated from the component parts of a living body by disease, communicates its own condition to all parts of the system capable of entering into the same state, if no cause exist in these parts by which the change is counteracted or destroyed." Thus, exposure to gaseous exhalations from animal matter undergoing decomposition, or arising from persons suffering from low Typhoid disease, the material gaining entrance into the blood through the lungs, will, if there is not sufficient resisting power in the system, set up a process of decomposition, which continuing, will give rise to the phenomena we observe in this form of Fever. Thus, in those cases in which decomposing animal matter is introduced into the system by a dissecting wound, we observe, first a chill, then febrile reaction with great depression, and finally, evidence of complete death of the blood, all the symptoms of reaction being of a Typhoid character.

This form of Fever may be either endemic, sporadic, epidemic, or contagious; if endemic, we will find more or less intense local cause; if sporadic, the miasm may have been speedily generated and dispersed; if epidemic, we have to look to the condition of the atmosphere, as regards moisture and temperature, for the rapid propagation and spread of the miasm. That in certain conditions the disease is contagious, I believe but few will deny. Thus, from a person suffering from low Typhoid Fever, there is continually given off in the excretions, and from the lungs, matter in a state of decomposition, and if proper attention is not paid to ventilation and cleanliness, these exhalations assume a degree of intensity that will unfavorably impress all that come within their reach, and will give rise to the same form of Fever, in those predisposed to disease.

Symptoms. — The early stage is frequently of considerable duration, the symptoms being those of depression. The patient complains of langour and debility, with giddiness, dullness, and confusion of intellect, of uneasiness at the belly, and sometimes slight nausea; the appetite is impaired; a general sense of soreness and stiffness, with more or less pain in the back and limbs, are not unfrequent. These symptoms increasing for two or three days, the patient complains of slight chilly sensations, with coldness of extremities, which becoming more marked, are alternated with flushes of heat. This

chill lasts usually from six to eight hours, but sometimes is prolonged to one or two days.

With the development of reaction, the pulse becomes frequent, full and open, or soft and weak, in some cases soft and easily compressed, or if of a nervous character, quick and sharp. The tongue is generally loaded with a dirty mucus, and is broad, soft, flabby, and moist, sometimes coated in the center, but with reddened tip and edges; there is considerable thirst. In some cases the tongue is heavily loaded, especially at the base, with bad taste in the mouth, and feeling of oppression at the belly, indicating morbid accumulations in the stomach. The urine is slightly diminished in quantity, appears turbid and frothy, but does not deposit a sediment; the bowels are frequently natural as to frequency, but extremely susceptible to the action of medicine; the discharges thin, pale, and frothy. The temperature of the surface varies greatly; sometimes it is intensely hot and pungent, but more frequently, but slightly, increased with tendency to coldness of extremities. The countenance is dull, pallid, and shrunken or transiently flushed; the eyes heavy and devoid of luster, and the head heavy, confused and giddy. The patient sometimes exhibits great uneasiness, and is restless, changing his position frequently, but at others, is torpid, careless, and unimpressible. The respiration is frequently but little affected the first two or three days, but sometimes frequent and depressive.

By the fifth to the eighth day we notice that the head has become more affected, the mind is confused, the patient reasons with difficulty and answers slowly. Sometimes, even at this early period, we have a partial development of that dreamy delirium termed Typhomania. The respiration has now become affected, and is short and quick, or labored and depressed. In many cases ulceration of the bowels manifests itself; the bowels are irregular; two, three, or four evacuations in the twenty-four hours, watery, yellowish, clay-colored, frothy, and fetid. The urine is but little diminished in quantity, but is pale and frothy, resembling whey or new-made beer. The patient now begins to complain, in many cases, of tenderness of the bowels, and it will be found that pressure produces pain.

By the tenth or twelfth day, the bowels have become quite loose, the operations frequent and difficult to arrest, with increased tenderness on pressure, and flatulent distention of the abdomen. The coating of the tongue has been gradually changing its color, and is now brown, somewhat fissured, or sometimes the coating has disappeared and the tongue is dry, red, and glossy; dark mucus commence to appear upon the teeth and lips. Typhomania has now become fully developed, the patient appears half-asleep, his mind wanders, he talks

to himself of his business, his pleasures, or reveling in the chambers of memory he appears to be living his past life over. Sometimes this dreamy delirium is replaced by considerable restlessness; the patient appears to be in a profound stupor, but is aroused by the slightest sound, to immediately sink back into his former condition. About this time, though sometimes as early as the fifth day, the rose-colored eruption makes its appearance upon the breast and neck; this eruption manifests itself in small rose-colored spots about the size of the head of a pin, the color disappears upon pressing the finger over them, but returns when the pressure is removed. Malaria sometimes makes its appearance at this time, in the shape of minute pointed vesicles, filled with limpid serum. The patient has now become so prostrated that he requires assistance to get up in bed, or change his position.

From this to the twentieth day, the diarrhea becomes worse, the discharges being dark, fetid, and very offensive, and the abdomen very much distended; the coating upon the tongue is almost black, and the teeth and lips covered with dark offensive excretions or matter from the stomach. The prostration is extreme, and the stupor profound. Frequently the heat of the surface sinks, the extremities being kept warm with the greatest difficulty; and sometimes a fetid perspiration. Small spots may sometimes make their appearance in the shape of purplish-red discolorations, not effaced by pressure; these extending, form large marks, like those produced by the strokes of a whip. The disposition of the patient is to lie flat upon his back, with tendency to slip down to the foot of the bed. The fæces and urine are now discharged involuntarily, or in some cases there is suppression of urine, which, if allowed to continue, will cause great distention of the bladder, with rapid prostration and death. Twitching of the tendons comes on with picking at the bed-clothes, and finally result in extreme anxiety and excessive restlessness. At last, the vital power of the patient is so far exhausted, that there is no longer power to circulate the blood, and the patient dies.

This form of fever is not unfrequently complicated by low forms of inflammation of various organs, and as the symptoms are obscure in many cases, much care must be used to detect them.

Treatment. — The object of treatment at first, is the arrest of the Fever, and this can be accomplished, in a majority of cases, by the seventh day, and before the severer symptoms make their appearance.

If there is evidence of morbid accumulation in the stomach, this must be removed, or all treatment will prove unsuccessful. I know from personal observation, that where the stomach is thus oppressed, Typhoid symptoms rapidly supervene, and the probabilities are that the patient will die, and farther, that such accumulations in the stomach prove the cause of the rapid development of the inflammation of

the intestines in many cases. In this case, an Emetic should precede all other treatment — the Acetous Emetic Tincture, or Compound Powder of Lobelia, and Capsicum being my favorite agents; if there is great prostration, a stimulant should be combined with them. The action of the Emetic should be prompt and thorough, and aided by warm stimulant diaphoretic infusions, which should be continued afterward, aided by the hot Mustard Foot-bath, and warmth applied to the body. As soon as the Emetic has ceased acting, the special Sedatives should be administered in doses just sufficient to continue the influence produced by the Emetic. If in the early part of the disease, the bronchial mucous membrane or lungs become affected, the same treatment should be adopted, with the addition of counter-irritation.

In other cases, we commence the use of the Aconite, in the proportion of 20 drops of the tincture of the root to ⅔ of a tumbler of water, and administer a tea-spoonful every hour. If the skin is hot and pungent, the Alkaline Sponge Bath should be employed, three or four times a day; but if there is deficient capillary circulation, with tendency to coldness of the extremities, a sufficient quantity of Tincture of Capsicum added to water, to give the necessary stimulation, should be employed in its stead. The extremities *must* be kept warm, or the entire treatment will fail, because, if the extremities are cold, with deficient capillary circulation in the skin, there is stasis or stagnation of blood in internal organs, which suffer as well as the blood, and if Sedatives are now administered, these conditions are increased, and though the pulse is diminished in frequency, it is also decreased in strength, with still further congestion. Sometimes I find it necessary to order the frequent application of Tincture of Capsicum or other strong stimulant to the extremities, with the constant use of bottles of Hot Water, etc.

The dose of Aconite named is about the medium quantity; where there is evidence of congestion, it will have to be smaller; if the febrile reaction is vigorous, it may be increased. I do not desire a marked change under twenty-four hours, and many times not before forty-eight, or even seventy-two hours. We will notice that the above remedies, used in this way, gradually decrease the frequency of the pulse; but it becomes more full, stronger, and especially better in parts far from the heart, evincing greater strength. At last, the pulse coming down to eighty or ninety beats per minute, we observe evidence of commencing secretion. Now, Diaphoretics and Diuretics may be advantageously employed, the Sedatives being continued in doses just sufficient to maintain their effect. As a Diaphoretic, we may use the Diaphoretic Powders in the usual doses, or an infusion of any of the simpler agents heretofore named. As a Diuretic, I employ a weak solution of equal parts of Chlorate and Acetate of Potassa, the medium dose of each being about five grains every four hours.

When secretion has commenced, *but not before*, we resort to Quinine to increase strength. I generally employ it in the following combination: Take Quinine and Hydrastine, equal parts, ½ dram; mix,

and divi le into fifteen powders, the dose being one every three hours, and governed as we mentioned in the preceding disease. If it seems necessary, stimulants may be employed in addition. Then, if the patient shows no tendency to sleep, about nine or ten o'clock in the evening, when everything has become quiet, a sufficient dose of Opium should be given to induce sleep.

During this time the patient should be freely supplied with diluents and such light food as the appetite craves, and we think can be easily digested. Every thing in the room and about the patient should be kept scrupulously clean, and the apartment thoroughly ventilated by admitting air from the sunny side of the house, and keeping an open fire in the room. Few persons should be in the room at a time, and the patient's mind kept calm. Especially should care be used not to excite expectant attention in the patient by secret movements, whispered conversation, or by failure of attention at the time expected. More depends upon this than is generally admitted by physicians. We can not "kick Nature out of doors and depend upon the Materia Medica," as has been advised by a somewhat prominent physician.

When the disease has progressed for some days, and the blood becomes seriously affected, we may not be able to arrest it, at least not speedily, and we must adopt additional treatment to meet the development of low Typhoid conditions.

When tenderness of the bowels is first noticed, the use of dry cups, followed by the application of Tincture of Arnica and Turpentine to the abdomen, will be found beneficial. Sometimes warm stimulant fomentations produce a good effect. If, at this time, there is torpor of the bowels, with indications that retained fæces are producing irritation, a mild Cathartic, carefully administered, will be advantageous —*under no other circumstances should Cathartics be employed.*

The Diarrhea may be controlled, at first, by the employment of any of the mild astringents. Frequently the Tris-nitrate of Bismuth, in solution, with Peppermint Water and Turpentine, acts admirably in doses of three grains of the first, one to two drams of the second, and ten to twenty drops of the third. An infusion of the bark of the young limbs of the Peach-tree, in tea-spoonful doses, with a small quantity of Tincture of Xanthoxylon, and one to two grains of Geraniin, is one of the best means of arresting it.

Tympanitis, or distention of the belly, is relieved by the local application of Turpentine, or demulcent injections containing the same, and its internal administration with Tincture of Xanthoxylon. Dr. Stoker strongly recommends injections of Yeast and Asafetida as the most efficacious means of removing this condition.

The prostration of the nervous system is combatted with Quinine, Bitter Tonics, Stimulants, and the regular administration of small quantities of nourishment, as Beef Tea, etc. When manifested by delirium or stupor, the ammoniated Tincture of Valerian, with Camphor, Tincture of Cypripedium or Serpentaria, may be used with advantage. If there is imminent danger to the patient, and especi ally if the discharges from the bowels are copious, I would administer Opium, with Camphor and warm aromatic Spices, the dose of

the first being large enough to induce sleep, say from one to two grains.

To control the septic condition of the blood, Acid Drinks should be freely given when desired by the patient. The Chlorate of Potash, combined with Hydrochlorate of Ammonia, is often useful. When the Diarrhea is profuse, the Chlorinated Soda, or Labarraque's Solution, is probably the best of the Chlorides. Its administration should be commenced in doses of fifteen drops, in Aromatic Water, every three or four hours, increasing it, as the disease progresses, to thirty or forty drops.

Yeast has been employed with advantage, in doses of two table spoonfuls every three hours, with an equal quantity of Camphor Mixture. It is said by Dr. Stoker, "to arrest the morbid contents of the alimentary canal, and the consequent symptoms of small putrid spots and Black Tongue, these being more effectually removed by it than by any other means."

With the exception of Quinine, I doubt much whether any advantage results from the administration of the Bitter Tonics. Stimulants additional to those named are required in the advanced stage of the disease, but they must be administered with care; small quantities, frequently repeated, so as to keep up a continual influence, are beneficial, but, under no circumstances, should the system be over-stimulated by large doses, and the stimulant then stopped, for the prostration ensuing might be fatal. Small quantities of bland Nutritious Food should be regularly administered, and Mucilaginous or Acid Drinks sufficient to satisfy the patient's thirst.

The patient's position should be frequently changed, and the bed shook up beneath him, and the cover straightened out. This is necessary to prevent injurious pressure on any part, which might give rise to Bed Sores; if any part becomes tender, with dark discolorations, or blanched white appearance, a weak Tincture of Arnica may be applied with advantage, the position being so changed as to remove the pressure from the part. If Bed Sores form, they should be washed with a solution of Sulphate of Zinc, from 10 to 20 grains to 1 ounce of Water, and a dressing of mild Zinc Ointment applied; the pressure being removed, this is generally sufficient for their cure.

If the disease exhibits a tendency to yield during the latter period of its progress, discharges should be aided by mild Diaphoretics and Diuretics, though, under no circumstances, must an additional amount of heat be applied to hurry their action. As soon as secretion commences, Quinine may be given in increased doses with advantage. Convalescence must be managed with great care, when the patient has been thus prostrated. Nourishing food of easy digestion, taken in small quantities, with gentle stimulants and tonics, pure air, light, and sunshine, are required. As convalescence becomes established, animal broths, with easily digested solid food, may be taken, but strictly controlled as to kind, quantity, and frequency.

YELLOW FEVER.

HAVING visited the West India Islands, and the southern and tropical climates, where this disease is generally located, I have, with the closest investigation, endeavored to trace out its causes and effects, and having suffered from it myself, I have acquired a thorough knowledge of both disease and treatment.

Yellow Fever prevails in, and is generally confined to, Africa, the West Indies, Mexico, bordering on the gulf, the Island of Cuba, and the southern portion of the United States, but extending occasionally as far north as Philadelphia, New York, and Boston; all of which places have been, from time to time, visited with the fearful ravages of this disease. The march of Yellow Fever, like other epidemics, is uncertain. For instance, New Orleans is almost entirely free from this Fever during one summer, while the next summer may be one of great fatality. A few years ago, it raged with greater violence than any year since the discovery of the country.

The exciting causes of this disease are the malaria or exhalations from alluvial, marshy soil, and that too from ground or marshes subject to inundation and draining, particularly when heavy rains have fallen for some time, swelling the creeks, ponds, rivers, and overflowing the low country. The rains having ceased, the country becomes drained and exposed to the intense heat of the sun, when the Fever in due time makes its appearance, so that wherever this condition of country exists, Yellow Fever will prevail, and in proportion to the exciting causes, or state of the weather. Wherever there is Yellow Fever, there also is found every variety of Intermittent, and very generally all varieties of Remittent and Bilious Fevers — these diseases arising from the same cause, are produced by different degrees of the virulence of the poison. The precise cause of the varying results of this principle has never yet been explained, nor fully comprehended by the most distinguished medical men, although its effects are constantly observed.

The opinions of the medical profession differ as to the contagious and non-contagious character of Yellow Fever. The truth is, this Fever is not contagious. I formed my opinion upon the fact that I have seen many persons exposed upon repeated occasions to this disease without contracting it. I give you the dangerous experiments of Dr. Firth, of Philadelphia, upon himself, as tasting Black Vomit, and inoculation with it, and the serum and saliva of patients, without taking the disease.

Dr. John Hastings, a distinguished surgeon of the United States Navy, says: "I have slept, for a considerable time, on repeated occa-

sions, (for want of better quarters,) under the same roof and in immediate contiguity with patients laboring under every stage of the disease, from the first day of the attack to the last hour of existence. I have also cut myself with a scalpel when handling Black Vomit, and the other fluids and tissues of patients who died of Yellow Fever, and still suffered not the least inconvenience from this contact and exposure. I do not believe the exhalations from the bodies have the least effect in reproducing the disease.

"Doubtless, the vitiation of the air, by means of these effluvia, is a strongly predisposing cause, in the same degree that an impure atmosphere from any other cause would be, and certainly is.

"It would not be possible, I think, to create the disease in a person confined with and waiting upon any number of those having it, provided they were removed from the district where the disease was contracted, to a position known to be free from its invasion, and attended by one who had not been exposed to the disorder, otherwise than by contact with those affected by it. Indeed, I have seen this state of things, and under it never saw the disease contracted.

"Humanity demands that the idea of contagion should be discountenanced by the profession in every epidemic disorder, unless it be so beyond the shadow of a doubt; since it calls forth the worst features of the human heart, in its ungovernable terror, and frequently causes even the mother to desert her dying child, and the sick and friendless stranger to languish, uncared for and shunned."

The predisposing causes are numerous in this disease. Any thing which disturbs the healthy and regular action of the system, predisposes to this Fever, especially exposure to the heat of the sun at midday, and the dews, excess in eating and drinking, particularly the latter. A spree in drinking is almost certain to lay open the system to the approach of the disease, since it brings with it many other imprudences equally dangerous, such as exposure to the sun, and cool, damp, night air. It can not be too much inculcated, on those who visit tropical countries, that exercise in the sun, and intemperance, are most pernicious and fatal practices, and these are most generally the causes that shorten the lives of the unacclimated.

Dr. Dewees, in his account of the epidemic that raged in Philadelphia, in the year 1793, says: "It has always been remarked that during the prevalence of Yellow Fever, persons newly married are constantly its victims; also to tipplers and to drunkards, to those who lived high and were of a corpulent habit of body, this disorder was very fatal. The recovery of such persons was very rare, and it is likewise the case with those who labor hard, or use too violent exercise.

"Of all the exciting causes of Yellow Fever, the act of coition is the most powerful. How many have we seen seized by a chill on leaving the arms of Pleasure, terminating their career in a few days. How many even have we seen the victims of a single nocturnal pollution!"

It is very strange in this disease, that in convalescence, persons are accompanied by excessive activity of the sexual appetite. Dr. Dewees says he noticed this in both sexes at Philadelphia, and in St. Domingo. "Delicacy," says Dr. Rush, "forbids a detail of the scenes of debauchery which were practised near the hospital, in some of the tents which had been appropriated to those who were getting well."

Breathing impure air, is a predisposing cause to this disease; thus an atmosphere laden with particles of putrid animal or other vitiated matter, is highly predisposing to the fever, from its deleterious effect upon the general health of the system.

Constipation of the bowels (which means costiveness), is a predisposing cause, and therefore great attention should be paid to keep them in regular and healthy action. Fear, or great disturbance of the nervous system from any cause, may produce this disease, and it is probable that it may lie dormant in the system for many days. Dr. Luzenberg, of New Orleans, mentions a very singular case on this point. He states that "In the month of February, 1844, there were received into the Marine Hospital two sailors with Yellow Fever, who had arrived from the West Indies, and who did not fall sick until they touched at the Balize, thirteen days after their departure."

Symptoms.— The first symptoms of Yellow Fever are felt twenty-four or forty-eight hours before its attack; the person feels a giddy, swimming sensation of the head; the bowels are costive; slight aching of the limbs. In some cases the commencement of the disease almost resembles Hysterics, from the disturbed state of the nervous system; but most generally the disease attacks by sudden sickness at the stomach, with vomiting; violent pain in the head, back part of the lower extremities, knee-joints, down the front part of the legs, and a creeping sensation down the backbone, with a slight chill. The countenance is flushed and swollen, the eyes look full and injected with blood, and of a singular, glassy appearance, with a stupid, heavy, anxious expression of countenance, which once seen can never be forgotten. The tongue is moist and covered with a white fur, with tip and edges of a pinkish color; bowels bound; pulse small — sometimes you can barely feel it; skin cool. These symptoms continue six or eight hours; patient still continues to feel a sensation of coldness even

when wrapt in blankets, and the skin to the touch of another is quite warm.

After these symptoms of the cold stage, a burning heat of the skin follows, with violent pains in the small of the back, with aggravation of all the other symptoms; slight pain from pressure over the stomach; vomiting continued from time to time, though never very severe, or causing much pain; the contents of the stomach are thrown up in an unaltered condition, as they were taken twenty-four hours before; when this is the case, it shows the deranged powers of digestion, and that it will be a severe case. After a few hours, the matter vomited becomes smaller in quantity, of a green color, and bitter, consisting almost of pure bile. The tongue gradually becomes covered with a yellow fur, the tip and edges becoming red; a severe, throbbing pain shoots across the temples, with strong pulsations or throbbings of the temporal arteries. The pain in the small of the back greatly increases, and is generally more severe than the pain of the head; great restlessness, with loss of sleep; no appetite; bowels generally bound, but not always — if this is the case, the urine is of a dark color, and diminished in quantity, but sometimes the urine is passed in large quantities and of a light color; the skin is very hot, dry, and flushed; pulses small and frequent, but not quick, being generally from eighty to ninety pulsations in a minute — it is mostly a masked pulse — one though not strong, yet indicating strength, that is to say, a pulse which conveys the impression to the touch and mind of being restrained, not having the power of developing itself in its full force. Often it is observed to be full, strong, and bounding, with great force, but without frequency. At this time insatiable thirst comes on, and continues throughout the disease, giving more annoyance to the patient than all the others.

There is very little loss of strength experienced by those affected with this Fever. So little is it felt, that one of the greatest difficulties in managing these cases, is to keep the patients quiet in bed. They have a constant disposition to move about and tell you they feel "Very well," as if nothing were the matter. This often occurs in some of the most fatal and intractable cases; hence, much harm is frequently done by allowing persons to move about in these "walking cases of Fever," as they are called; which are not uncommon. Notwithstanding this moving about, the disease is not altered or interrupted in its course, but proceeds regularly, step by step, and occasions dissolution generally upon a certain day. This feature of the disease, I suspect, has often given rise to the belief that patients have died of Yellow Fever, after twenty-four or forty-eight hours' illness, because they were seen at this period for the first time, or

had not been longer confined to their beds. The symptoms are often so mild, that they are quite neglected, when prompt and early treatment would afford relief; but many continue moving about in this restless state, and, by this neglect, often render a case fatal, that would otherwise be susceptible of cure.

During the first twenty-four hours of the hot stage, there is often a well-marked remission in the Fever. The skin becomes cooler and the pulse more natural, with an abatement of all the symptoms, and it is not unusual to have the skin even moist with perspiration. Yet the remission is of very short duration, when all the symptoms return with their original force. Thus the disease continues in its course, without remission, for about ninety-six hours, or until the commencement of the fifth day, when a rapid change occurs. Then the tongue and lips become dry and covered with a dark crust, particularly the centre of the tongue, its tip and edges looking like raw beef. The vomiting becomes more frequent, but without much effort; the matter ejected assuming a glairy mucous appearance, with an occasional dark thread or spot mixed with it. The whites of the eyes have a yellowish hue, and the skin begins to take the same shade. The bowels are moved occasionally, stools being dark colored and liquid, passed in some cases very often. The mind at this time begins to give away; the patient comprehends slowly, and looks at you with a bewildered expression, before he gives an answer.

By the sixth day (sometimes commencing on the fifth), there is a disposition to sleep, medically called *Coma*, from which the patient is roused with a wild stare; the mind totters thus until it is entirely lost.

Toward the close of the sixth, or beginning of the seventh day, there is an occasional vomiting of dark brown or blackish matter, in a glairy mucous, which has been very correctly likened to coffee grounds, to which it bears a striking resemblance. This vomiting of black matter, called the Black Vomit, continues till death: it is ejected without difficulty, and frequently in large quantities; its appearance frequently alarms the patient, if he be conscious, and, for the first time during his illness, he begins to think himself in danger.

There is, frequently, from the fifth to the seventh day, hiccough; bleeding from the gums and mouth, which dries upon the lips and tongue; and stoppage of the urine.

Toward the close of the seventh day, there is deep, heavy stupor, and low muttering; the patient becomes restless, and frequently throws himself about; body becomes of a yellow color; the features contracted or pinched up; sometimes most violent convulsions or fits,

but generally it does not pass beyond mere restlessness; but still I have seen these convulsions or fits so severe, during the last hours of existence, that it required four or five stout men to keep the dying man upon his bed. Most generally, the patient dies on the seventh day, yet in some instances death occurs at a later period.

I have now explained to you the regular course of this disease, to its termination. In some instances, where the persons are of a plethoric, full habit, and short neck, predisposed to Apoplexy, or Diseases of the Heart, or other conditions of ill-health, previous to an attack of Fever, their death frequently occurs upon the third or fourth day. But when these incidental circumstances do not interrupt the regular progress of the disease, death occurs on the seventh day.

The Rev. Theodore Clapp, of New Orleans, one of the most distinguished and brilliant of men, and conspicuous for his learning and philanthropy — a resident for twenty years of that city — says that he has witnessed eleven epidemic Yellow Fever years, carrying to a sudden grave never less than three thousand human beings, and often five thousand. Within that space of twenty years, one hundred thousand human beings had found a grave in New Orleans, and of that immense host, twenty-five thousand were young men between the ages of eighteen and twenty-five years, each one being the representative of some distant family.

What a fearful and melancholy picture of the ravages of the dread destroyer of the South, the Yellow Fever! One hundred thousand deaths! Oh! how many hearts have been crushed, and how many homes made desolate, by the stern and relentless edict of the fell tyrant! Humanity shudders at the scene.

Treatment. — There is no general agreement among medical men in controlling that dreadful disease, Yellow Fever, which has lost none of its ancient terrors. The blow with which it strikes down its victims to-day, in New Orleans, is as unerring and resistless as it was half a century ago, at Cadiz, or Gibraltar, although many medical men assert that they have ascertained the best and most effectual means of combating and controlling this disease, of diminishing its severity, and preventing its fatal issue. Dr. Rush, the great advocate for the Lancet, and who bled upon almost every occasion, said, that during the great Philadelphia epidemic of 1793, at no time did he fairly lose more than one in twenty of his patients. He was one of the stanchest champions of the Lancet in Yellow Fever; he stood by it through evil and through good report. In his account of Fever in the year 1794, in Philadelphia, he gives a statement of his bleeding in twenty-three cases. He is said to have bled Dr. Physic, of Philadelphia, to the amount of one hundred and seventy-six ounces. This bold and dangerous practice of using the Lancet, is now con-

sidered improper and unsafe, and in nearly all cases extremely dangerous. The most that can be said in its favor is, that if the patient attacked with this Fever be a powerful, strong man, with violent pain in the head and back, hard, throbbing pulse, with strongly marked inflammatory symptoms, one plentiful bleeding may be of infinite service, if done in the first twelve hours. Except in these circumstances just mentioned, I consider it extremely dangerous.

As a means of reducing the active excitement, in the first stage of this disease, as a substitute for the Lancet, you will find Cold Water, poured over the body, a highly valuable remedy. It gives relief in the great heat of the skin which accompanies this Fever, and in the tormenting thirst, distressing headache, and pain and irritability of the stomach. Although the relief is sometimes partial and transient, yet this remedy should be repeated as often as necessary, as no danger or injury is to be apprehended from it. The proper time for giving this affusion of Cold Water is at the end of the chill, if there be one, when the patient's face becomes flushed, and the surface of the skin dry and hot — a condition that almost invariably attends this form of Fever. Seat the patient in some convenient vessel, and pour rapidly, from some slight elevation, upon his head and shoulders, and over his naked body, a full, large stream of Cold Water, continuing it until his face becomes pale, or his pulse sinks. In general, the sick man will express his delight at the ease which follows it, and will ask you to frequently repeat it. I have never yet seen any unpleasant consequences from it; even children and women reconcile themselves readily to the shock, and regard it as pleasurable rather than otherwise. The surface of the body should now be rubbed dry, and the patient, on lying down, covered so as to be comfortably warm. If the patient be seen during the cold stage of the disease, which generally lasts for six or eight hours, apply a large Blister over the pit of the stomach. This soon allays vomiting. Give 1 grain of Podophyllin and 2 of Leptandrin; triturate with 10 grains of White Sugar, and repeat in four hours if it does not operate. Saline medicines are very valuable remedies in this disease. If the chill continues long, use a Warm Bath, in which mix Mustard, so as to form a warm Mustard Bath of good strength. Perspiration, or sweating, is to be promoted by warm drinks.

You must remember that in the commencement of this disease, a good Cathartic, or Purge, of an active kind, should be given, followed by Salts, so as to open the bowels freely, which will generally afford relief. If the bowels be not open daily, they should be injected with a Clyster of 2 ounces of Castor Oil to 2 ounces of Turpentine, mixed with a pint of Water, in which Flax-seed has been boiled. This Clyster should be given once or twice a day, if the vomiting continues, or if there is the least approach to dullness or stupor.

Dr. Nott, of Mobile, has for several years been in the habit of administering Creosote during the febrile stage. He says that after opening the bowels, he puts 20 drops of Creosote to 6 ounces of Spirit of Mindererus, with Alcohol enough to dissolve the Creosote, and then give half an ounce every two hours. This remedy is considered

one of the most valuable known for arresting the disposition to vomit and retch. Cold applications, such as Ice-water, should be kept constantly applied to the head during Fever, and Ice or Ice-water kept in the mouth to allay thirst, but should not be swallowed in large quantities, for it is all-important to keep the stomach perfectly quiet.

Where the skin becomes hot and dry, remember that it should be sponged with Cold Water and Vinegar to relieve the pain in the small of the back, which the patient feels most severely. Sinapisms, or Mustard Plasters, should be applied along the spine or backbone, which will give relief. Be particular and attend strictly to the change of this disease from the second to the third stage, which is to be met with an active stimulating treatment, the administering of Brandy Toddy, or Julep, either as may be preferred. This is to be cautiously given, in small quantities, until it is ascertained that your patient has a relish for it, when you may give it freely until the depressing tendency of the disease is fully arrested.

After the restlessness has moderated, and the pulse rallied or improved, you are to continue to use the Brandy or Julep, or Wine, in such quantities as may be necessary to sustain your patient. After the liberal use of Brandy, small quantities of Chicken or Oyster Broth may be cautiously given, or any mild nourishment. If retained by the stomach, then your fears may lessen as to the approach of Black Vomit — yet be prudent and cautious as to this matter. Where there are, however, threatenings of Black Vomit, Spanish physicians apply Vinegar and Mustard Poultice over the pit of the stomach.

Having had opportunities of seeing much of this disease in Havana, and on the coast of Spain, as well as up the Mediterranean, where it prevails extensively, I will give you the treatment generally adopted by the Spanish physicians. It consists in the use of mild and cooling laxatives, such as Supertartrate of Potassa, or Cream of Tartar, and drinks of Tamarind Water, Lemonade, and sub-acid drinks, with tea made from Orange-flowers, and, in the cold stage, a Mustard Bath. The Spanish practitioners are violently opposed to the Lancet and Mercury.

Dr. Flores, at Cadiz, in 1813, at his first visit, which was usually in the evening or night, ordered an injection of Sweet Oil, warm Aromatic or Spiced Drinks, and the application of Mustard Plasters to the feet. Next morning, he gave a powder, composed of 10 grains of Calomel and 10 of Jalap, with Barley-water or light Broth, followed, if necessary, by a Clyster, so as to promote the action of the medicine.

If the patient vomited, and the stomach was very irritable, the Calomel was given in divided doses, made into pills, until it operated on the bowels freely, which was generally followed by relief, affording tranquillity, mitigation of local pains, and perspiration. On the approach of the third stage, Quinine, Animal Broths, Barley-water, Sago, and Wine, were administered, to afford strength to the system. If there were threatenings of Black Vomit, Vinegar and Mustard Poultices were applied to the pit of the stomach, and injections given of Salt and Water.

I close these remarks with my own views in relation to this disease and treatment, preferring to all others the French method, which is very simple. On the first attack of the disease, place the patient's feet and legs in a warm Mustard Bath, and give hot Teas to drink; after which place in a bed and cover with warm blankets, or place between warm blankets, so as to produce a sweat as soon as possible, for early perspiration is an important remedy in arresting this Fever. For this purpose use St. John's Wort, made into a tea, medically called *Eupatorium Perfoliatum.* It should be drunk freely. After the sweating stage is over, give a dose of Calomel and Jalap, of each 10 grains, or, in its room, 2 Blue Pills every two hours, so as to act on the liver and bowels.* Too much purging prostrates the system. Cooling Clysters are very valuable. If the Calomel and Jalap do not act on the bowels, I promote its action by the use of Epsom Salts.

Remember that in the second stage of the disease, no active system of practice is to be pursued, except Warm Teas and the Blue Pill to act on the liver, and gently on the bowels. The third stage is to be carefully watched and met with active stimulating treatment, consisting of Wine, Toddy, Juleps, etc., which may be cautiously given until the depressing or sinking tendencies of the disease are stopped. The disposition to vomit or retch after opening the bowels, which is generally the case, is to be stopped by the mixture used by Dr. Nott, and a Vinegar and Mustard Poultice applied to the pit of the stomach. Be cautious, always, in giving small quantities of nourishment, such as Barley-water, Chicken or Oyster Broth, in such quantities as may be retained by the stomach, as this organ is very irritable in this disease. Do not let your patient get up too early, lest he have a relapse, for experience has proved that it is impossible to cut short a grave and serious case of Yellow Fever. Nine cases in ten die by getting out of bed too soon.

I have seen the simpler and milder form of this Fever occurring sometimes in unacclimated persons, as well as those acclimated, and in children, terminated favorable, by applying a Mustard Bath to the feet and legs, giving them warm Teas and a mild Cathartic at the same time.

I feel a firm conviction of the truth and correctness of my remarks in relation to simplicity in the treatment of this disease, for the more simple the treatment is, the better, and there is no disease more entirely under the control of medical treatment than Yellow Fever, nor is there any one more imperatively demanding early attention in the use of those simple remedies I have mentioned. When convalescence takes place, if possible, the person should not remain in the same climate, for any length of time, exposed to the exciting cause.

In connection with this subject, I must mention, for the prevention of this Fever on board of ships, that captains of vessels should prepare themselves with the Chloride of Lime, which is an important agent in purifying all places inaccessible by the scrubbing brush,

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* Instead of the Calomel, use two grains of Podophyllin, and instead of Blue Pills, use the Cathartic Liver Pills. (See page 1134.)

destroying the noxious effluvia of all crowded apartments. Every part of the ship should be kept free from filth. The Chloride, mixed with water, should be poured into the pump wells, and distributed throughout the holds, chain-lockers, berth-deck, and other parts of the ship. That great cleanliness, temperance, and cheerfulness ward off this disease to a great extent, there can not be the slightest doubt. Music, though not often regarded as a preventive, is in my opinion an important aid, for it places the system, through the influence of the common sensorium, in a favorable condition to resist the action of the morbific causes; so will the smoking of tobacco keep off the Fever, in what are called miasmatic situations. In an infected atmosphere, any thing which purifies it, to an experienced person, must give full evidence of its utility as a preventive of all fevers, particularly of the one now under consideration.

It is curious, as connected with this disease, to trace the various medical opinions in relation to the origin of Yellow Fever, or the causes which produce it. We are, however, convinced that in warm climates this disease more assuredly prevails at certain seasons of the year, in low, wet, marshy districts, depending, as to time, in a great measure, on the peculiar state of the atmosphere, and the various changes that may occur during the season. It is essential to all seaports, to establish quarantine regulations, or vessels from Havana, and other places in the tropics, where Yellow Fevers annually prevail, may come directly to the various cities, with their cargoes, having their vessels reeking with foul air, which, mingling with a hot and humid atmosphere, soon spreads, and combined with the causes I have before mentioned, the epidemic will prevail through cities, which otherwise would have been exempt, or nearly so.

With a few remarks I shall close this subject, and it will be well for the afflicted to attend to these instructions.

In all cases of bad Fever, the loss of the saline or preservative power appears to be, in every instance, the chief cause of the entire dissolution of the vital fluid. I have found, by practical experience, that one of the most successful means of treatment is to protect the organs from the increased excitement, during the early stage of the disease, by cooling applications; that after the excitement is sufficiently reduced, proper nourishment should be given, as well as certain saline medicines, such as Rochelle Salts, Carbonate of Soda, etc. I am induced to believe that, if this practice was generally adopted, the mortality from Fever in hot climates, would be greatly lessened. It can be clearly proved that patients who are left entirely to themselves, with the cooling applications I have before mentioned, have a much better chance of recovery, than those who are treated with Emetics, Calomel, or Antimony, Opium, or Acids, which, instead of being useful, add greatly to the sufferings of the patient. They decidedly increase the very evil they are meant to relieve, and add greatly to the mortality in hot climates.

The success of this practice has been confirmed by Dr. George William Stedman, and others, of St. Thomas, as well as by Dr. Greatrex, of Trinidad, who had charge of a military hospital in that island, at

a time when there was considerable sickness in the garrison. Dr. G. states, that out of three hundred and forty cases of Fever, treated in the manner described, not one had died; although Trinidad is generally considered to be one of the most sickly islands of the West Indies. With these practical remarks, I must conclude my subject.

INFLAMMATORY FEVER.

THIS Fever comes on after severe chills, followed by a steady and great increase of heat; the pulse becomes strong; there is frequent pain in the head and back, and sometimes over the whole body; with great anxiety, followed by redness in the face, throbbing of the temples, restlessness, with intense heat and great thirst, which can not be satisfied. The tongue is covered with a white fur; the pulse from ninety to one hundred and thirty in a minute; hurried or great oppression of breathing, and sickness at the stomach; skin dry and hot; the eyes inflamed and incapable of bearing the light; the urine is scanty and highly colored, depositing a red sediment; bowels very costive; there is generally an abatement of this Fever in the evening or at night.

This disease generally runs its course in about fourteen days, and terminates critically either by a sweat, by Diarrhea, or Hemorrhage, or Bleeding from the nose, or by copious discharge of urine, in which is deposited the sediment I have before spoken of. If it does not pass off in this way, it changes to a Typhoid, and then should be treated as I have directed in that Fever.

The causes which produce this disease, are sudden changes from heat to cold; sudden cold, by checking the perspiration when warm; drinking spirituous liquors to excess; drinking cold drinks when over-heated; violent passions of the mind; exposure to the rays of the sun; outward inflammations; the stoppage of certain evacuations in both males and females, by which I mean the courses in women, and costiveness in men; likewise the sudden stopping of eruptions on the skin.

Treatment. — In the old practice, at the commencement of this Fever, and indeed in almost every regular or continued Fever, Bleeding was generally thought necessary; but in the present day, it is seldom resorted to, unless the heat, thirst, and the force of the circulation, should be very great, or the patient be a plethoric, strong, muscular person, and of good, unimpaired constitution. I have, however, found that great relief was given to such persons as I have

mentioned, by Bleeding at the commencement of the disease, and regulating the quantity of blood drawn by the effect it produced, as one will bear the loss of a great deal, and another will bear the loss of a small quantity. This practice has, like every thing else in the last few years, undergone a considerable change, and Bleeding is seldom resorted to. Cold applications, by sponging the whole body freely with Cold Water, or a mixture of Cold Water and Vinegar, and cooling applications, to the head, will, in most cases, entirely subdue all febrile action, and bring on the secreting stage, with perfect relief from all unpleasant symptoms.

It would be useless to sponge the body for a few moments only; you must keep it up until you entirely subdue the febrile action, or the excitement will return with greater violence, as soon as the cold applications are discontinued. When the patient experiences chilly sensations from the use of Cold Water, it should be discontinued immediately.

When the Fever has been of several days' standing, and the head much affected with pain or delirium, great benefit can be afforded by applying three or four leeches to each temple. Apply to the forehead and temples, cloths wet in Cold Vinegar and Water, which will, in most cases, afford relief to the head, and remove the determination, which is violent in this disease, without using the leeches, and sponge the body as before directed. The great object to be attained in Fever, is to moderate the force of the circulation, and at the same time to open the pores of the skin, to increase the secretion of the urine, and loosen the bowels. For this purpose I have generally used Ipecac, in 1 or 1½ grain doses, dissolve in a little Warm Water or Molasses, or a syrup of any kind, once in two hours. It must not be given in too large doses, or too often; nor continued to any length of time, as it will produce sickness of the stomach if continued too long. If used with prudence, it often puts an end to Fever, quiets the nerves and uneasy sensations, and induces sleep. All heating things, in the early stage of the Fever, should be carefully avoided, especially stimulating and intoxicating drinks.

A dose of active Cathartic Pills, or of the Anti-bilious Powder; or a powder composed of 1 grain of Podophyllin and 4 of Leptandrin, should be given, with a tea-spoonful of Cream of Tartar. A dose of Senna and Salts is also good, as a cooling physic. Active and cooling purgatives not only relieve the head, and tend to allay general Fever, but also prevent determination to the lungs and liver, if used with judgment.

Laxative Clysters should also be used; cooling drinks; free ventilation; light bed-clothes; the mind kept perfectly tranquil; no noise to disturb the patient; the room darkened slightly, as light in this disease is generally painful to the eyes and oppressive to the brain.

Diaphoretics, or medicines which produce perspiration, are of great benefit in continued Fever, by determining the circulation to the surface of the body.

You will find the use of the Warm Bath very beneficial in encouraging or promoting the powers of these medicines. In many cases,

it may be only necessary to produce perspiration or sweating, to bathe the feet in Warm Water, drink plentifully of Sage, or Balm or Ground Ivy, or Boneset, or Pennyroyal, or Flax-seed Tea, to which add a little Sweet Spirits of Niter. Remember, in every species of Inflammatory Fever, to invite perspiration, rather by simple means, than to force it by any violent measures. When these measures are employed and act favorably, they reduce the heat, soften the skin, relieve the head, prevent delirium, and induce sleep and quietude. When this is the case, you may be assured of your acting properly, but when sweating is excited in Fevers, by stimulating, heating or inflammatory medicines, it is sure to prove hurtful. It injures when produced by external heat, or overloading your patient with bed-clothes; by so doing you increase the frequency and hardness of the pulse, the anxiety and difficulty of breathing, with headache and delirium, therefore, instead of relieving your patient, you do him a serious injury.

It is sometimes necessary to have recourse to artificial heat, in order to equalize the circulation and produce perspiration, so that, when it is difficult to obtain the Warm Bath, use Hot Bricks dipped in Water or Vinegar, or pour it upon them, and then cover the Bricks with flannel or cloths, and apply them to the feet, between the thighs, to the sides, or armpits, covering your patient moderately, so as to confine the steam or vapor. This causes speedily a relaxation of the surface, and produces sweating. There are, however, cases attended by great heat of the surface, particularly in the early stages of the Nervous and Scarlet Fevers, and in this Fever, in which these warm applications do not create perspiration, but rather aggravate the disease than give relief; when this is the case, we find Cold Water better than warm applications to the body.

It sometimes happens that certain parts of the body are much affected — there is oppression of breathing, violent pain in the head, and stupor or delirium.

In all such cases the application of a hot poultice of flaxseed meal will be proper, and afford relief. In coldness of the extremities, dry heat in the form of bottles of hot water, hot salt in bags, bricks heated and applied to the feet, legs and spine, afford great relief. Heat is a powerful general stimulant, and helps greatly to restore the balance of circulation and diminish morbid congestions. In all cases of the Fever, there is a fullness of the vessels; the vessels of the eyes are red, the face flushed, and the eye-ball itself apparently enlarged; but congestion produces, also, irritation, and often a less degree of phrenzy. The usual wanderings of the mind are more rapid, the voice quick, the temper irritable, unreasonable, and occasionally violent.

In these conditions, bathing the head with cool water and bathing the feet in warm water, and keeping them warm after the bath, will often produce quiet and restful sleep.

The milder symptoms of congestion, in this disease, generally yield to Purgative Medicines, and when they have been properly used, I have not found Blisters often necessary. Sleep, in this Fever, as in all other Fevers, is much interrupted, and from want of proper rest delirium often arises. Many physicians administer Opium to procure

sleep. I have found it an uncertain medicine, although it sometimes acts favorably; but should it fail to procure rest, the delirium will be greatly increased by it. In such cases, a pillow of Hops laid under the patient's head, or a strong tea of this herb given, will generally have the desired effect of procuring sleep. In my practice I have found Camphor to be one of the most valuable medicines in all Fevers, and in many instances it has procured sleep, when nothing else would. The calmness which this medicine seems to inspire; the serenity, and even the temporary ease which it produces, render it truly valuable. The preparations used are the Camphorated Powders or Julep. When this Fever does not yield to the remedies pointed out, but assumes the symptoms of *Typhoid*, it is to be treated as advised under that head.

On recovery, attention should be paid to diet, avoid overloading the stomach; living on such things as are light, nourishing, and easy of digestion; seek fresh air, gentle exercise on horseback, or in a carriage; cheerful company; a little good Wine or Porter, if it agrees with the stomach and head, and avoid all causes which may produce a relapse. If the appetite should not readily return, or the digestion prove weak, some Tonic Bitters will be necessary to give strength to the stomach and digestive powers. When this Fever leaves, the patient is often troubled with Cough, Night-sweats, and irritable and irregular state of mind, a capricious, and very often a great appetite. These are, in general, marks of debility only, and will soon disappear with returning strength. Good nursing and proper attention to the wants of the sick, will often work miracles in restoring the patient to health; while, on the contrary, neglect, and the want of the common comforts of life, often result fatally.

In the latter stages, instead of giving Cathartics or strong Purgatives, it is much safer, and preserves the strength of the patient, to use injections. When you choose them, a table-spoonful of common Salt, dissolved in a pint of warm Water, or Molasses and Water, is as good a way as any to produce an operation by the bowels. Where nourishment can not be retained by the stomach, Broth, Milk, and Water Gruel, and other nutritive liquids, are often given by injection mixed with Tea, or 15 drops of Laudanum, to secure their stay in the bowels. Patients have frequently been supported in this way for many days and weeks, until they have been restored to health.

In some instances, toward its close, there will be almost constantly a Bilious Diarrhea, which, in spite of all remedies to check it, will continue until the Fever has come to a crisis. Where Diarrhea is not very severe, it is not a symptom which calls for very powerful remedies. It is better to check it by injections, in which put 15 or 20 drops of Laudanum, or a tea made of the ground Logwood, is a valuable and innocent remedy, and may be generally relied on as an astringent. Grain doses of Sulphate of Zinc, which is White Vitriol, or Grain doses of Sugar of Lead, either made into a pill or in solution, will sometimes prove more effectual. Small doses of Rhubarb and Magnesia often prove effectual where other means fail.

HOW TO FORETELL (PROGNOSIS OF) DISEASE.

PROGNOSIS OF FEVERS is the opinion formed of any particular attack, either favorable or unfavorable. Now, if the reader will be attentive, he may be instructed in the art of foretelling what may happen to the patient, with respect to the termination or change of the disease, either by death or recovery. This knowledge is very important to one who has never read medicine as a profession, or had experience in practice.

The prognostic of an impending disease may be drawn from the appearance of the countenance, the mode of living, the changes in habit or situation, and the critical period of life. If you should see a person who has been apparently healthy, become sallow, weak, with loss of appetite and spirits, restless and uneasy, with a disturbed sleep, you may reasonably conclude that some disease threatens. Should these appearances be gradually disclosed, with a countenance tinged lightly with yellow, it is probable that obstruction in the liver has taken place; if more rapidly, with slight shiverings occasionally, a Fever threatens; a regular Fever of an evening, at a certain time, gradually increasing, with cough, threatens a Hectic Fever; a more violent shiver, with considerable heat, a continued Fever, a deep redness in the face, with inflammation in the eyes, plainly point out accumulations in the head; and these symptoms frequently arise from diseases impeding a free circulation through the lungs, so that the state of these organs must be considered in forming your opinion of the disease. They often exist together, and aggravate each other. Violent fixed pains in the head, recurring at irregular intervals, and usually excited by every cause of increased circulation, generally show that some fixed obstruction prevents the free course of the blood through the organ, followed by convulsions or fits, sometimes by insanity, and frequently by a sudden termination of life, as in Apoplexy.

A fullness in the stomach and belly, are certain signs of accumulation, and it depends on the comparison of the other symptoms, whether it be obstructions of the viscera, which means the internal organs of the body, or accumulated contents, or merely flatulence, or wind; the prognostic must be regulated by comparing the symptoms of each disease. The mode of life often leads us to form some prognostic of an impending disorder.

Late hours can not be borne with impunity, except by very few, and their principal effect is to induce obstructions in the abdominal viscera. If connected with drinking spirituous liquors, the effect is

usually felt on the liver. The sedentary student is subject to biliary accumulations, with costiveness, and a train of hypochondriac symptoms. Excess in eating or drinking will equally lead us to foretell diseases of the stomach, often of the head, connected with the stomach; but retributive justice is frequently seen to punish those who eat to excess, or more than the stomach can bear, by loss of appetite. Almost every situation is apparently consistent with health, if free and pure air be admitted, with temperance and exercise; but the want of a proper attention to these leads to a variety of diseases, such as Debility, Consumption, etc., which can easily be foreseen and avoided by a change. Changes of habits and situations are frequently the sources of different diseases, which we can often prognosticate, and sometimes guard against. Abstemiousness suddenly adopted after free living, and the contrary, are sources of disease — the former chiefly of complaints arising from insufficient stimulus, the latter from too great excitement. A sedentary, after an active life, is often attended with languor or weakness, low spirits, and visceral accumulations; the contrary, at first with languor or fatigue, soon followed by increased tone and vigor.

The critical periods of life require strict attention in forming our opinions of various diseases. If Scrofulous affections do not yield in the early period of life, there is little prospect of a cure. The same may be said of Epileptic Fits and the St. Vitus' Dance. The critical period of female life, is that of the stoppage of the usual monthly current of the Catamenia; for, unless hectic symptoms come on, the monthly discharge, though at a much later period than usual, becomes regular. The period of cessation or stoppage of the monthly, if not preceded by free or copious discharge, gives evidence of a less healthy old age.

In forming our opinion as to diseases, our best information is to be derived from the state of the circulation and the respiration, usually known by physicians as the vital, animal, or natural actions, and prognostics are usually drawn from them, which we will endeavor to explain.

The vital action is chiefly known by the pulse. The pulse consists in the reciprocal contraction and dilation of the heart and arteries, by the former of which the blood is propelled through every part of the body, therefore, great attention is necessary in feeling the pulse, as it often misleads, unless you accustom yourself to examination, and this is not difficult to do, if you will pay attention to the directions I lay down. Now, in judging of its strength or weakness, it is important to consider the sex, temperature, and age of the patient. In women, the pulse is quicker than in men; in the

sanguine, than in the melancholic temperament; in youth, than in age.

The infant's pulse, during the first year of its life, is from one hundred and eight to one hundred and twenty; during the second year, it ranges from ninety to one hundred and eight; the third year, from ninety to one hundred. From this time to the seventh year, it varies very little, when it falls to about seventy-five; and the eighth year, it scarcely exceeds seventy. From disease, and numerous other causes, they are subject to great variety. After a full meal, or taking any stimulus, the pulse is quickened; or after exercise, or any agitation, it is also quicker. When you are standing, it is quicker than when you are sitting, and when you are sitting, it is quicker than when you are lying down.

The pulse in hysterical patients beats with great rapidity, but without any danger arising from it.

A fat person has naturally a weak pulse, because it beats to a great disadvantage beneath a layer of fat. When this is the case, you must make allowances. In a thin person this error can seldom arise, for we can feel distinctly the pulsation. A natural pulse is from sixty to eighty, or more strictly from sixty-five to seventy-five. On feeling the pulse, the arteries should be first felt gently, and if any doubt arise whether the pulse is weak, compress the artery strongly with three fingers, then slowly raise the two uppermost fingers; if the pulse be strong, and seemingly weak only from compression, the blood rapidly returning will strike fully the finger below; but if it be really weak, it slowly recovers its former force.

When you feel a strong, firm pulse, it is a sign of good health; but if it strike the finger like a tense cord, it is a sign of approaching disease; if this hardness is increased in frequency, it shows that In flammatory Fever is present.

A throbbing pulse which strikes the finger with apparent, but not real firmness, will sometimes be mistaken for what is styled the hard pulse. But this has not the same firm resistance which we have described. It strikes sharply but not strongly, and the relaxation is as rapid as the pulse is transitory. When there is internal irritation, the throbbing pulse will continue often to the last, showing its peculiar character more strongly; in the commencement of Fevers, it often so nearly resembles the strong pulse as to deceive. A small pulse will also be mistaken for a weak one, unless you have experience, or attend strictly to this matter. The lightness of its strokes depends on the small sixe, sometimes the depth of the artery. If a pulse be at fifty-five or fifty, there is reason to fear some compression of the brain. A constant pulse of ninety in a minute, rising occa-

sionally to one hundred and eight, shows a considerable irritation in the system, and is not without danger.

If, in the early stages of Fever, it rises to one hundred and twenty in a female, not peculiarly irritable, it portends considerable danger, either from debility or irritation.

If, at any stage, it exceed one hundred and twenty, or considerably exceed it, except for a short time, we have the greatest foundation for apprehension.

An intermitting pulse is a mark of considerable debility, and prognosticates a dangerous disease. It is also a symptom of organic affections. This alarming view of the subject requires, however, some alleviation.

An intermitting pulse is frequently owing to fullness of the stomach and bowels, and often arises from agitation of mind. It is also habitual, a circumstance not uncommon. In such constitutions, the usual intermissions, on the access of Fever, often disappear; and the first symptom of amendment is the return of the intermission, which, at the end of the long Fever, may appear alarming, if not connected with other favorable symptoms.

In general, the favorable signs are pulses more soft, somewhat fuller, and in a slight degree more slow. The unfavorable signs are, more thready pulses, as if the artery were smaller, pulsations quick, weak, and irregular. The state of the circulation is also known by the complexion. A sallowness, and a want of transparency, show that the blood is not carried to the extreme vessels; and even when the cheeks are flushed, if the skin around the lips and nose be of an opaque, sallow whiteness, the conclusion will be the same, that the strength of the constitution is considerably impaired. The appearances of the eyes are equally indicative of strength and weakness, and the character of the features is preserved in proportion to the remaining strength.

Each appearance depends on the state of the circulation. Respiration, which means breathing, is a vital action, connected with the state of the circulation, and of the greatest importance as a prognostic, or sign, in judging disease. Breathing slow, full, and deep, shows the strength and all the vital organs to be unimpaired, and in every situation is highly favorable. The weak, slight, and insufficient breathings, are, in general, a mark of weakness; the suffocating shows obstructions, the quick breathing, considerable irritation.

The stertorous, or noisy breathing, resembling snoring, shows insensibility, from compression on the brain; the stridulous, which means a creaking sound in the breathing, inflammation of the wind-

pipe, with a rattling accumulation of phlegm, attends the last efforts of expiring life.

The animal actions from which we draw prognostics, or signs, are the senses, muscular action, and sleep. Violent delirium is a symptom of active inflammation in the brain, and is dangerous, and shows a violent acute disorder. The wandering delirium, in fevers of a low kind, is a symptom of no great danger, unless it comes on early in the stage of the Fever. In all other complaints, it is dangerous, and shows that the inequality of excitement depends on debility, or weakness. If it continues after the Fever has ceased, unless it is evidently in consequence of debility, then you have good reason to suspect some organic injury in the brain, and more so, if a violent delirium occurred in the forepart of the complaint. Delirium arising from want of sleep is thought not to be dangerous, but the want of sleep, however, is most generally owing to a languid inflammation of the brain. General restlessness is a symptom of the same kind.

Of the external senses and their organs, the eye affords the most particular symptoms by which the event may be foretold. When the patient picks the bed-clothes, or thinks he sees black spots, it is a sign of great debility, and is produced by a palsy in the retina, which means an expansion of the optic nerve. This is a very dangerous symptom, but not a desperate one, as I have seen patients recover when this symptom was present, although a very dangerous one. A more dangerous symptom is double vision, generally an early symptom of Hydrocephalus, or Dropsy on the Brain. If the eyelids fall, and the patient can scarcely raise them by the exertion of his will, it is a great sign of weakness, and if the patient sleeps with half-closed eyelids, it is a sign of great insensibility. This is produced by an irregular contraction of the muscles of the eyes, for the pupil is drawn up under the lid. This is an alarming symptom.

When the eye is clear and natural in its appearance, it is a favorable symptom; but great brilliancy, or quick, rapid motions of the eye, is a sign of approaching delirium. This is likewise produced, or generally so, when the patient has a fixed, severe look, as when he has his eye fastened on some particular object.

When there is a blackness in the lower lid, toward the inner corner of the eye, it points out a weak state of the system. When patients complain of a noise in the ears during Fevers, particularly in weakly constitutions and old people, it is a sign of weakness; but if this noise occurs in the beginning of Fever, it is a sign of a long and tedious disease, and perhaps a violent one. When the hearing is very acute, it shows strong excitement in the brain, and is very often the forerunner in severe Fevers of delirium. On the attack of Fevers,

great weakness, to such a degree as to produce fainting, is always a very dangerous symptom, and, if accompanied with a wandering of the mind, the danger is greater.

In Fever, if a patient can support himself in bed occasionally, about the tenth or twelfth day, turn over on his side, sit erect, or with his head elevated, his symptoms are favorable. If his sleep is calm and refreshing, it is always a favorable symptom; but if the sleep is disturbed, starts, talks in a hurried manner, startled as if by some dreadful images in his sleep, though not conscious of terror, it is unfavorable.

Deep sleep is itself a disease, and generally shows a considerable oppression of the brain; yet at the period of a crisis, by which is meant a favorable or unfavorable turn of a Fever, should this deep sleep be attended with a soft pulse, moderately slow, and a soft, moist skin, it is favorable. After a turn of the Fever, a deep, long, and continued sleep is not dangerous, provided it is not attended with a sound like snoring, or with a pulse unnatural, and so low as to be scarcely felt. In Fever the appetite is at once destroyed, and, in a severe disease, it is not favorable that it should remain, or return too soon.

The tongue is important as a sign. Whiteness of its surface is a sign of Fever; when white and dry, it shows the Fever to be more considerable. As the Fever progresses it becomes brown, a darker brown, and even a black; and these colors are usually seen when the tongue is dry and hard. While the edges continue clean, and of their natural, speckled appearance, there is very little danger. Indeed, Fevers have terminated favorably in my practice, in hundreds of instances, where the tongue has been for many days dark, dry, brown, and even black. When the tongue, in the course of Fever, sometimes becomes suddenly clean, and of a shining red, it shows that the Fever will continue some time. The tongue in old people and weakly constitutions, is often black at the back part, and is therefore somewhat deceptive.

A load or weight at the stomach arises from indigestible food, or an accumulation of viscid mucus, or a want of energy in the organ. When the irritability of the stomach is exhausted or worn out by excessive stimuli, as in the case of drunkards, or those who have used spirituous liquors to excess, the effect is a heavy load. Vomiting is the connecting symptom between the affections of the digestive and the secretory organs. If vomiting is violent and constant, without previous accumulation of bile, it may be considered an unfavorable symptom, generally caused from irritation of the brain, and when from bile it is distressing. Constant Diarrhea is danger-

ous, showing debility. Another prognostic, or sign, is the perspiration or sweat. Cold, clammy sweats arise from a total relaxation of the exhalants, and are in general the evident signs of death.

The urine, when highly red, without depositing any sediment, shows a violent and probably a long Fever. In general, where there is a scum on the top, in the early period of Fevers, I have usually found them to be slow and tedious. In Bilious Fever the urine is sometimes of a green, or of a dark color, which shows a highly putrid state. In chronic diseases, red urine, depositing a copious, red, branny sediment, after standing for a time, is a mark of considerable weakness. A mucus, like the white of an egg, is an indication of disease of the bladder, and is a frequent symptom of Gravel and Calculus, which means Stone.

The nature of the stools is of considerable importance, and they should be examined frequently with attention. Liquid, frothy, watery motions, with little color or smell, is a sign, pretty generally, of a tedious Fever. When the stools, in the beginning, smell very offensive and bilious, it has been considered by some an unfavorable symptom; but if the discharge be free and copious, it is rather favorable. Calomel will, through the whole course of a Fever, often bring off such motions, because it acts powerfully on the biliary secretions. Where the patient evacuates small, black, pitch-like motions, or stools, it shows weakness in the alimentary canal and the biliary system; but when the stools are of a hard excrement, and come away without much difficulty, it is favorable.

I consider the situation of the patient a dangerous one, if the natural appearance of the face is lost; if the eyes apparently glare on vacancy; when the patient's answers are rambling and difficult to understand; a pinching up or contraction of the features, or face; trembling of the tongue when put out, looking dark and very dry; lies on his back; refuses to turn on his side; sinking down on his bed; extremities cold; occasionally starting or jerking of the nerves; picking or removing any dark spots on the bed-clothes, or wishing some dark object to be taken away; these symptoms are a sign of great debility and weakness, and the earlier they take place in Fever, the greater will be the danger.

Very favorable symptoms, and signs of a favorable termination of the disease, are these: The countenance is unchanged, and the expression natural; the mind is steady and undisturbed; the sleep, though short and interrupted, is refreshing, and the patient tells you that he is sensible of having slept; when the tongue is clean at the edges, the belly neither hard nor painful on pressure with your fingers, the

patient lying on either side, and awaking from sleep without any hurry or confusion.

In all cases where Fevers have been properly managed, in the early period of the disease, there are few instances in which a favorable change does not take place on the tenth or fourteenth day. From these remarks, and these signs of disease, which I have given, you will, by strict observation at the bedside of your patient, be able to form a favorable or unfavorable opinion as to the termination of the disease, noticing attentively the degrees of debility and other attending circumstances, such as constitution, habits, age, and the severity of the attack.

ERUPTIVE DISEASES.

SCARLET FEVER.

THIS disease is medically called *Scarlatina*, and breaks out in spots or blotches, which are called eruptive, making their appearance on the surface of the body, of a scarlet or red color. The rash, or reddish color, may be compared to staining the skin with poke-berries, to which it bears a very striking resemblance. These spots or blotches appear generally between the second and sixth day, accompanied by Fever and Sore Throat, and usually terminating between the seventh and tenth day.

The inflammation in the worst forms of Scarlet Fever, runs into ulceration and sloughing. It is usually divided medically into three forms, viz.: 1st. *Scarlatina Simplex*, which means simple Scarlet Fever; in this stage of the disease the throat is not affected. 2d. *Anginosa*, if the throat be sore and ulcerated. 3d. *Maligna*, when putrid symptoms appear, and the body becomes very offensive. The latter stage of this disease, however, is of very rare occurrence. I have seen this latter disease attack two or three children in one family, and injure the cheek of one of them very severely by inflammation and ulceration, the same as Cancer.

The three forms are essentially the same, only varying in the degree of severity; they are always liable to be modified by circumstances, which may cause one to merge gradually into another, and the disorder, from being slight at first, may gradually, if not properly and

in due time attended to, become severe. The treatment is simple, and, according to my experience, generally successful.

Symptoms. — Should the attack be mild, the symptoms will commence with slight Fever. The eruption appears, generally, on the second or third day, first about the neck and face, in the form of innumerable red spots, which, in twenty-four hours or less, cover the whole body. Upon the limbs, but especially about the fingers, there is a continued redness, but on the trunk of the body the rash is distributed in irregular patches. The color of the eruption is a bright scarlet, being always most distinct about the loins and bendings of the joints. The redness spreads over the surface of the mouth. The tongue is furred in the center, while the edges and point are of a brilliant scarlet color; the eruption is most plain toward evening. As the fever increases, sometimes there is vomiting, generally accompanied with headache, thirst, and restlessness. On the third day, generally, the whole surface of the body is of a bright red color, hot and dry. The eruption is at its hight on the fourth day; it begins to decline on the fifth, when these patches widen, and the florid or red hue begins to fade; on the sixth day, the rash is very indistinct; and on the eighth day, it is generally entirely gone. After this the disease begins to disappear, the skin then peels off with scurvy scales, and it generally terminates in about a week. The symptoms I have described are those which constitute the milder form of Scarlet Fever; but in the more severe form may be added a greater sensation of weakness; the Fever increases, with slight delirium, breathing difficult, thirst very great, with very sore throat; and in some constitutions this complaint is dangerous, requiring prompt and strict attention. The pulse in children is invariably very rapid, frequently numbering one hundred and forty or fifty in a minute; and in grown persons, or adults, one hundred and twenty or thirty. The artery feels small, and the beat is rather soft, and often obscure, though sometimes hard and wiry. The symptom which is the most constant in this affection — the one without which, in fact, the disease never exists — is a peculiar inflammation of the throat, which almost immediately runs into a state of ulceration. Upon pressing down the tongue with a handle of a spoon, and looking into the mouth, the palate and throat, as far as can be seen, appear swollen and of a deep florid color, and upon one or both tonsils may be seen whitish or grayish ulcers. These ulcers are sometimes small, and are usually confined to the tonsils or glands, which means on each side of the throat, and they occasionally extend to the uvula, which means the palate, and to other parts of the throat and mouth. The inflammation, and consequent swelling and ulceration of the throat, is one of

the most troublesome symptoms attendant upon the disease, a great and painful difficulty in swallowing. The difficulty is in some cases so great, as to render it impossible to get any thing into the stomach; liquids being frequently ejected through the nostrils. In some cases, however, swallowing is performed without pain or difficulty.

There is, however, a great accumulation of mucus or phlegm, which is constantly gathering in the throat, and in children produces a disagreeable rattling noise in breathing. This is caused by the passage of the air through the accumulated phlegm, which is constantly being forced forward and discharged from the nose. This symptom continues a number of days, and frequently gives to the family much unnecessary alarm. Sometimes the inflammation extends to the ear, and causes pain and swelling of the glands under the jaw and on the throat; and after the Fever has subsided, they either gradually disappear or go on to suppuration, and finally heal and discharge their contents outwardly. When these abscesses form and discharge through the ear, they frequently produce a degree of deafness.

Scarlet Fever runs its course with great regularity, and may be termed a self-limited disease. The eruption appears on the second day, and continues, with but little visible alteration, until about the seventh day, when it begins to fade, and generally, if no severe effects have occurred from the violence of the Fever, on the ninth day the patient may be considered out of danger.

Scarlet Fever may be known from the Measles, which it greatly resembles, by the absence of cough and other apparent symptoms of cold, and also by the appearance of the eruption, it being more of a scarlet color, and the dots smaller, and by its appearing on the second instead of the fourth day; by the ulcerations in the throat, and the prevailing epidemic.

If Measles be known to be about, or the patient has been exposed to this contagion, we may suspect the disease to be the Measles; but if there has been no exposure, or if the patient has previously had the disorder, there will be no difficulty in forming a correct opinion as to the nature of the disease.

There is and has been considerable and various opinions as to this complaint, whether it is contagious. Judging from my own experience and observation, which has been by no means limited, I am inclined to the opinion that it is, in a greater or less degree, contagious or catching, and would recommend that all reasonable means should be used to prevent it from spreading in that way, by keeping the sick and those who are well as much separate as circumstances will permit. The uniformity with which this complaint has made its appearance about the fifth day, after exposure to the contagion,

has been to my mind one of the strongest proofs of its contagious character; for a number of cases, during my long practice, have fully satisfied me that the disease originated in this manner. And it is well known to every observer, that all persons are not equally susceptible to the contagion, and, though one may take it, another, who is equally exposed, may not take it. This disease is mostly confined to infancy and youth, though the susceptibility to it is not extinct at thirty or forty years; but it very rarely attacks persons over thirty, and when it does, it is generally mild, and not often dangerous. A person who has had it once may take it again, but this is very seldom the case; if so, it must be owing to some peculiar susceptibility of constitution, or predisposition. A second attack, however, is generally less severe than the first.

The cause of Scarlet Fever, after every investigation, is not known. It appears in all seasons of the year, but is more frequent in cold, wet, or damp weather.

This complaint prevails EPIDEMICALLY, and is produced, no doubt, by some atmospheric influences or exhalations from the earth, the precise nature of which is not known.

Treatment.— The treatment in Scarlet Fever should generally be confined to very mild measures, confinement to a room of an agreeable temperature to the feelings of the patient, avoiding cold or draughts of air, and the drinks cool, after the cold stage has passed off. During the continuance of the cold stage, warm drinks, such as Sage, Pennyroyal, or Catnip, or Saffron Tea, so as to produce perspiration, may be given very freely if the stomach will retain them; but should the stomach be irritable and the vomiting frequent, very small quantities only of liquids should be allowed, and these must be of a nature calculated to allay the sickness. For this purpose, Spearmint or cold Ice Water, or Soda Water, are among the most suitable. A Mustard Poultice applied over the pit of the stomach, is often a valuable remedy for the sickness and vomiting.

In the first stage of this disease, the most important thing to be done is to bathe the feet and hands in hot Water, and continue this for the first two or three days, repeating it two or three times a day. In applying the Bath, great care should be observed so as to prevent the patient from getting cold; after which he should be quickly wiped dry and placed in bed comfortably warm. Should this disease be attended by headache, or costive or confined bowels, some gentle purgative may be given, as Epsom Salts or Seidlitz Powders; remembering that any powerful Emetics or active Cathartics are not only unnecessary, but decidedly injurious in every stage of the disease.

The second, or eruptive stage of the Fever, may be reckoned from the second or the third to the seventh or eighth day, during which time the patient should be kept perfectly quiet, in an agreeable, pleasant room, from which the light should be excluded. The bed

clothes, as well as the inner clothing, should be frequently changed; and every attention paid to cleanliness, airing the room, and the general comfort of the patient. No solid food of any kind should be allowed, nothing but light diet; and as the thirst is usually great, give, in reasonable quantities, cold Water, Lemonade, Tamarind Water, Soda Water, Rice Water, Balm or Flax-seed Tea; and any cooling drinks may be allowed freely as the means of contributing to the comfort of the patient. But one of the most powerful, and at the same time one of the most pleasant remedies for carrying off the inordinate heat and subduing the raging Fever, is a persevering application of uncooked Fat Bacon, applying it over the whole surface of the body. In mild cases this disease requires only confinement of the patient to a comfortable temperature, with low diet and cooling drinks, and the use of the inside rind of Bacon, two or three times a day; which in ninteen cases in twenty will effect a cure.

Emetics may be found useful in the commencement, and sometimes through the whole course of the Fever. None will have a better effect than Ipecac, in suitable doses, according to the age of the patient. (See Table for Dose.) It is not always necessary, however, to give an Emetic, but if there be soreness of the throat, and a gathering of mucus or phlegm in the throat, impeding respiration, a mild Emetic will have a very beneficial effect. When given in the forming stage of the disease, or at a very early period, it lessens the Fever, and prevents it from becoming so violent, and in many cases effects a cure, or renders it extremely light. The close and intimate connection which exists between the stomach and skin is so great that if a healthy action be exerted or produced on one, the other experiences a good effect. Emetics are very serviceable in cleansing and removing the mucus or phlegm in the throat, which generally exists at this stage of the disease.

Purgatives in this, as in other Fevers, may prove useful, for they moderate arterial action, relieve the pain in the head, prevent delirium, and remove the morbid secretions of the liver, stomach, and whole alimentary canal. It must be recollected that children, among whom Scarlet Fever generally prevails, must have their bowels properly attended to. You will find that in cleansing the stomach and bowels with one or two gentle purgatives—the dose to be in proportion to the age of the patient—much benefit frequently will result. The compound infusion of Senna and Manna, an excellent and simple medicine, and preferable to Castor Oil or Salts, particularly where there is nausea or sickness of the stomach, is the best. In the mild form of this disease simple purgatives, tepid bathing, cooling drinks, free air, a light diet, with rest, are, in general, all that is required. In the first three days of the disease, I have found cold affusions, purgatives, and cold drinks, truly beneficial. After the third day, the affusions, or bathing, should be tepid, unless the general excitement and heat of the skin still remain very considerable. The skin must be above the natural temperature and dry, when you make use of cold bathing.

Dr. John Eberle, Professor of the Theory and Practice of Medicine in the Jefferson Medical College of Philadelphia, says the appli-

cation of Cold Water to the surface of the body can not be too strongly recommended, in higher grades of this disease. In his late medical work, he quotes the following passage from Dr. Bateman, a distinguished physician: "As far as my experience has taught me, we have no physical agent by which the functions of the animal economy are controlled, with so much certainty, safety, and promptitude, as by the application of Cold Water to the skin, under the increased heat in Scarlet Fever, and in truth, in all forms of disease, where there is great heat.

In a large majority of the cases of Scarlet Fever, little or no medicine is needed, but it is of the greatest importance to know that the disease is really Scarlet Fever, on account of the care that should be exercised in order to avoid the serious after-effects of the disease. The most serious of these is the affection of the kidneys, which is very liable to come on, even as long as two or three weeks after the patient is apparently well. This comes generally from taking cold, and is attended with a dropsical condition, scanty urine and sometimes bloody urine. As long as the skin is peeling off, the child should be kept warm and flannels worn next the skin.

Should the dropsical condition come on, warm baths must be given, and free action of the skin be induced by warmth, and moderate doses of Rochelle Salts or Cream Tartar be given to produce watery discharges from the bowels. Good nourishment should be given, but mostly in the form of concentrated liquids, as Beef-Tea, Milk, Milk Porridge, etc.

If the child remains pale and weak, the Tincture of Iron should be given three times a day, along with good nourishment.

Running of the Ears and Sore Throat often follow Scarlet Fever, and they must be treated carefully, by cleansing, etc., to prevent permanent loss of hearing.

There is great virtue in the simple remedy of Fat Bacon, and the efficacy of this remedy has been generally admitted by physicians who have used it in Scarlet Fever. My plan has been to have the whole body well rubbed, or greased, with the inside rind of fat, uncooked Bacon, during the whole course of the disease. When this simple remedy is applied, it gives instant relief, produces exemption from Fever, and affords instant, refreshing sleep.

A late and valuable remedy in this disease—Raw Cranberries—has been noticed, and although a very simple one, it has, in hundreds of cases, been successful. The New Haven *Palladium* records a case of the complete cure of this disease, by the simple application of Raw Cranberries, pounded fine. The patient was a young lady, one side of whose face had become so much swollen and inflamed, that the eye had become closed, and the pain excessive. A poultice of Cranberries was applied. After several changes, the pain ceased, the inflammation subsided, and, in the course of a couple of days, every vestige of the disease had disappeared.

The old proverb well says, "An ounce of prevention is worth a pound of cure," and in no disease will a preventive be hailed with more satisfaction than in this. Though disputed by some, my experi-

ence assures me that we have such an agent in Belladonna. It is true, that it will not ward off the disease in all cases, but it will in many, and render it much lighter in those who subsequently have it. I usually prescribe as follows: Take Tincture of Belladonna, 20 drops; Water, 4 ounces; and give one tea-spoonful four times a day. If given in larger doses, it does not seem to have the desired effect.

One of the simplest, and yet one of the most effectual, plans of treatment, is to give one tea-spoonful every hour of the following combination: Take Tincture of Aconite, 20 drops; Tincture of Belladonna, 20 drops; Muriate of Ammonia, ½ dram; Water, 4 ounces. The bowels should be gently opened, and the entire surface of the body washed frequently with Castile Soap and Water tepid. For the throat, nothing is better than a flannel cloth wrung out of Cold Vinegar and applied, and covered with a dry one. It may be changed every hour or two.

As a gargle, the following combination will be found one of the best: Take Chlorate of Potash and Muriate of Ammonia, equal parts, ½ dram; Water, 3 ounces, and Glycerine, 1 ounce. The throat should be thoroughly washed with this every two or three hours. Another gargle for the throat, may be formed by adding 1 tea-spoonful of Blood Root to 1 pint of equal parts of Vinegar and Water, hot; after standing for eight hours, it will be ready for use. If the throat is much stopped up, so that the child labors for breath, or if too young to use a gargle, we would steam the throat with the following: Take of Wormwood, Hops, and Tansy, each, 1 handful; put in a tin vessel having a cover (a tin tea-pot or half-gallon tin-cup are excellent,) and cover them with ½ pint of Vinegar and 1 quart of Water. Set on the stove or fire, and bring it to the boiling point; then taking it quickly to where the child is lying, bring its head to the edge of the bed, take off the lid of the vessel and let it inhale the steam. To render it more efficient, throw a shawl over the head of the child and vessel, so as to retain the vapor. This may be repeated as often as it seems necessary.

Swelling of the throat externally, frequently comes on during the disease, and if not promptly treated, goes on to suppuration. To prevent this, I would recommend the bathing of the part frequently with equal parts of Tincture of Arnica and Linseed Oil, or, what is better, the expressed Oil of Spiceberry. If this should not arrest it, apply poultices to bring it to a head as soon as possible, that it may break or be opened.

SPOTTED FEVER.

A NEW disease has appeared in this country, and is called Spotted Fever, from the peculiar eruption that comes out upon the skin. We speak of it as a new disease, because it is so termed by physicians;

and yet it has been known for hundreds of years. The first account we have of it was in 1505, when it spread over Europe; again it made its appearance in 1528, and was followed by the Plague; and in 1556, it was attended with great mortality. It reappeared in 1592, and subsequently about every thirty years, up to 1805. Its first appearance in this country was at Medway, Massachusetts, in March, 1806; and from that period to the year 1815, it was met with throughout the United States, though chiefly confined to New England.

During the last century it is said to have followed the great European armies, among which it made great ravages. So intimately was it associated with war that the Germans applied to it the name of *War Fever*, or *War Plague*. Though reappearing now, during the largest and most eventful war of which we have record, we can not trace any relationship between the two, for it has appeared in peaceful localities, and not in our armies or hospitals.

The symptoms of the disease in 1805 were similar to what they are now. In its course all the functions of the body were more or less interrupted, and often some of them were entirely suspended. The patient is seized in the midst of his usual labor, and oftentimes struck down suddenly, almost as by a stroke of lightning. The first symptoms are local pain or paralysis, delirium or stupor, and, rarely, spasms or convulsions. The disease often commences with shifting pains; the patient suddenly feels a pain in one joint or limb, in a finger or toe, in the side, stomach, back, neck, or head. Sometimes mild, but at others so intense as to demand immediate attention. Often there is constantly increasing soreness, stiffness and pain in the back, extending up to the base of the brain, and when the disease is fully developed, the pain starts from the back, and is attended with partial convulsions.

In some instances the disease progresses rapidly; the patient in the morning is apparently well, except slight soreness of the back, and muscles. The pain in the back increases; a chill comes, followed by high fever; the sufferer gradually becoming unconscious, with sometimes convulsions, death occurring perhaps within twenty-four or forty-eight hours. An eruption appears during the last hours, of light red spots, from a pin's head in size to that of a split pea; as the patient gets worse, these become darker and larger, and after death are livid, and numerous, so that the skin seems to be mottled.

In other cases the disease is not nearly so severe, and runs a much slower course. For two or three days the patient is listless, dull, and stupid; the face is flushed and dusky, eyes tumid, some pain in the head and back, loss of appetite, tongue dusky red and coated with a dirty mucus. He is still able to go about, but feels badly. On the

second or third day there is a well-marked chill, lasting for two or three hours, and attended with marked prostration. Following this, is febrile reaction, sometimes high, at others not very well marked. In the one case the surface becomes intensely hot and flushed; the pulse 120 to 140, sharp and hard; with great irritability and restlessness, though there is marked dullness of the mind; the bowels are constipated, and urine scanty. In from two to six days, the Fever continuing, an eruption appears upon the surface, very closely resembling Measles, though more distinct. If the patient recovers, the spots commence fading out by the end of the first twenty-four hours, but do not entirely disappear for some days; if the disease progresses to a fatal termination, they become dusky, and at last livid, and of considerable size. As they become livid, the patient loses his consciousness, and soon sinks into a stupor from which he can not be aroused.

Diagnosis. — The characteristic symptoms of Spotted Fever are pain in the back and head, and various parts of the body, with very great and unnatural loss of strength.

Treatment. — We would advise that a good physician should be immediately sent for, though frequently it will not do to wait for his arrival. The treatment is very simple, but yet it must be pursued vigorously, as, with such symptoms as we have described, no time is to be lost. First give the patient a thorough emetic, of the Emetic Powder, or of equal parts of Ipecacuanha, and Mustard; or, if neither of these can be obtained, of Mustard and Water, or Salt and Water. Put a Mustard Plaster the entire length of the spine, and flannel cloths wrung out of hot Mustard Water to the legs and bowels. As soon as the Emetic has operated, give one grain doses of Ipecacuanha every hour, with from 2 to 10 grains of Quinine, the dose depending upon the severity of the symptoms — the greater the prostration the larger the dose of Quinine. This, for the severer form of the disease, has proven remarkably successful.

When the disease runs slower, treat it as a Typhus or Typhoid Fever, though in most cases it is best to commence with an emetic; after this, move the bowels, bathe the feet thoroughly in Mustard and Water, and give freely an infusion of Pleurisy Root and Boneset. Sponge frequently with Vinegar and Water, and, as the Fever commences to subside, give Quinine in the usual doses.

SMALL-POX — VARIOLA.

THIS disease is too well-known to need a particular description. It is always caused, or communicated by contagion; that is, caught from others who have it. It is usually divided by medical

writers into two kinds, the Distinct and the Confluent; but they are both the same disease, in different degrees of severity. The Distinct form is the mildest, where the pustules or scabs are fewer, distinct from each other, and do not run together. On the other hand, it is said to be Confluent when the pustules, especially on the face, hands, and arms, run together and form one continuous scab, and, of course, is much more virulent and dangerous.

When the virus or contagion has once been taken into the system, the disease can not be prevented; but it may be greatly modified, both by immediate Vaccination, and by a course of Diet and preparation of the system. It is, therefore, proper to understand premonitory symptoms. As soon as it is known that a person has been exposed to the disease, he should be vaccinated, even though he has been vaccinated before. Vaccination will often modify the disease, if done at any time before the appearance of the eruption on the surface. The patient should also be put on light diet, purged frequently, and drink freely of Sassafras Tea, in order to thin the blood, and reduce the system, all of which is calculated to render the disease lighter when it does come.

As a general thing, persons have the Small-pox but once. It is very contagious. Those who come in contact with, or are exposed to this disease, if not previously vaccinated, will seldom escape. A few cases have been known of persons having the disease the second time.

Premonitory, or First Symptoms. — Small-pox commences first with chilly sensations, alternating with flashes of heat, and great pain in the small of the back; with pain in the head, soreness of the throat, dislike to motion, nausea, perhaps vomiting, thirst, and stupor. The disease approaches very much like an attack of the Ague, or Chills and Fever. The fever becomes more continuous. On the third or fourth day the eruption appears on the face, neck and breast, in small spots, like flea-bites, which increase for the next four or five days; during which time the eruption appears, more or less, over the whole body. It is always worse on the face. Sometimes the eyelids become so much swollen as to be entirely closed, producing complete blindness for the time. About the eighth day the process of suppuration, or formation of matter in the pustules, is complete. About the eleventh, the inflammation subsides, and the pustules begin to decline, dry up, finally scale off, and disappear about the fourteenth or fifteenth day.

Treatment. — I suppose that in most cases of Small-pox, a physician will be called. I have no doubt that there are many ladies in the country, as well as non-professional men, who can treat a case of

Small-pox as well as half the physicians. It is a disease which requires mild treatment and simple remedies. In the first stage, before the appearance of the eruption, you may not be able to tell whether it is Small-pox or some other febrile disease; but the treatment should be about the same in either case. Bathe the feet well in warm Lye Water. If there is sickness at the stomach, there is nothing better to allay it, perhaps, than frequent sups of warm Spearmint or Peppermint Tea, with a little Saleratus dissolved in it. If the nausea and vomiting are sufficiently allayed, give a purgative. There is nothing better than the Anti-bilious Physic. After the bowels have been cleansed by the action of the Physic, should there be any sickness at the stomach, or vomiting, give a mild emetic of Lobelia and Ipecac, or Ipecac alone, with Catnip Tea.

Attention must now be paid to the skin. Such medicines must be given as will act gently upon it and the cutaneous vessels, but not enough to produce copious or profuse perspiration. This action must be kept up, moderately, throughout the whole course of the disease. As a tea, which should be drank constantly, or at short intervals, there is nothing better than an infusion made of about two parts of Catnip and one of Saffron, to be drank warm. It acts gently upon the skin, produces a slight determination to the surface, and will assist nature to throw out the eruption. A little Sassafras Bark is also a valuable addition.

The feet should be bathed, for twenty or thirty minutes at a time, in Lye Water, as hot as can be borne, and the whole surface washed with it two or three times a day, previous to the appearance of the eruption. It may be continued once or twice a day after the eruption has appeared, until vesication or scabbing has taken place. Bathe and wash the body with warm water, if there is much fever and heat, notwithstanding the eruption. A little Saleratus, or common Lye, should always be added to the water; it helps to open the pores and keep the skin cleansed, by removing the oily, sebaceous matter from the surface.

If there is great pain in the head, bathe it with Vinegar and Water, and apply Mustard Plasters to the bottom of the feet and ankles.

To aid in removing the phlegm and mucus from the throat and bronchial tubes, and for sore throat, give occasionally a tea-spoonful or two of the Expectorant Tincture, (see Table of Family Medicines.) Also use a gargle — a decoction of Sage, with Honey and Borax. In bad cases, where there is a tendency to putrescency, the patient should take half a tea-cupful of Hop Yeast three or four times a day. If there is great prostration, debility, and sinking, a little Quinine, or Peruvian Bark, should be given in some Whey or Buttermilk. The Diaphoretic Powders may be given in eight or ten grain doses, two or three times in twenty-four hours, if there is much restlessness — especially at night should a dose be given.

As a common drink, to be used all the while previous to the full eruption, and to act gently on the skin, there is nothing better than a tea made of Sassafras Bark and Catnip. It should be taken warm, and a tea-cupful or two given as often as three or four times a day.

It is especially good in *bringing out the eruption.* A little Saffron may be added, if convenient; and, if the Catnip can not be had, use Saffron and Sassafras.

After the eruption has appeared, the above infusion may be left off, and the following used: Take 1 ounce of the powdered Macrotys Root (Black Cohosh) to 1 pint of Boiling Water, and give of the infusion one or two table-spoonfuls every three hours, warm. This should be continued, with very little other medicine, through the second stage, or till the pustules begin to dry up and decline, when the patient begins to grow better.

The Macrotys or Black Cohosh, called also Rattle Root, is an important remedy in Small-pox. The patient should be kept under the influence of it, from the first appearance of the eruption, until he becomes convalescent. It keeps the eruption to the surface, prevents a retrocession or going in, and will bring out the eruption again, in case it has gone in. The infusion of the root is, perhaps, the best form in which to use it; but if the root can not be had, the concentrated preparation, called Macrotin, may be used in doses of a half to a whole grain, given three or four times a day; or the tincture of the root may be used, in tea-spoonful doses, once in three or four hours.

The bowels, of course, are to be kept open and in a lax condition; but no harsh or active purgative must be given. The best thing for this purpose is about two table-spoonfuls of Sweet Oil, to be taken every night at bed-time; or a table-spoonful of Sweet Oil and as much of the Neutralizing Cordial.

If the lungs should become affected, as sometimes happens, give an Emetic of Lobelia, Blood Root, and Ipecac. Keep the patient afterward under the influence of the Emetic, by giving occasionally tea-spoonful doses of equal parts of Tincture of Macrotys, Lobelia, and Blood Root; or the same articles may be given in infusion, in table-spoonful doses.

If the face swells much, and there is much suffering on this account, bathe it frequently with warm Milk and Water, and keep well lubricated with Sweet Oil. To prevent the face and other parts from being *marked* by the pox, cover the parts with small pieces of silk, moistened with pure Sweet or Olive Oil, and keep the room as dark as possible. Exclude the light entirely, if you can, most of the time. Attend strictly to these directions and you may prevent pitting entirely, even in the worst of cases. It will also be necessary, sometimes, to tie or confine the patient's hands, or he may injure his face.

Pursue the foregoing course of treatment and you will succeed in nearly every case, I care not how bad it may be. Rely upon the Macrotys — it is nearly a specific in this disease. By its use the Secondary Fever, which is so much to be dreaded, and which is often so very dangerous in the worst forms of the disease, may generally be prevented, or very much modified. The patient will also convalesce, and gain his strength much more rapidly, after the disease has passed off, where this article has been freely used.

Sometimes, in the Confluent form of the disease, the bowels become

affected with a putrescent Diarrhea, tending to Gangrene and Mortification. In such cases, give powdered Charcoal and Niter, or Saltpeter, a table-spoonful of the former and a half a tea-spoonful of the latter, at a time, three or four times a day; also, plenty of Hop Yeast, and occasionally a dose of Sweet Oil and Spirits of Turpentine.

In case the eruption should recede, or strike in, at any time during the second stage, give the Macrotys freely, in larger doses, and put the patient into a Warm Bath. The Tincture of the Iris Versicolor (Blue Flag), is also good in such cases, given in tea-spoonful doses, every two or three hours.

REGIMEN. — The patient should be kept cool, and as easy as possible. The diet, of course, should be light, such as Corn-Meal Gruel, Buttermilk and Water, Mush and Buttermilk, roasted Apples, Lemonade, Toast and Water, and the like. The room should be kept well cleansed and aired, the linen and bed-clothes changed often, and all noise and disturbance, as far as possible, prevented.

VARIOLOID.

THIS is a modified form of Small-pox, modified by the influence of Vaccination. It is generally mild, and without danger. It is to be treated the same as a case of genuine Small-pox, only that the treatment should be graduated according to the mildness or severity of the symptoms. Sometimes the disease is very mild, requiring scarcely any treatment; at other times it approaches very nearly to a genuine case of Small-pox, and requires a full course of treatment.

CHICKEN-POX—VARICELLA.

THE Chicken-pox, sometimes also called Water-pox, is an eruptive disease, consisting of pimples scattered over the body, but appearing mostly over the back, shoulders, and arms. They are generally smooth, transparent or whitish, and flattened at the top. After a few days, they become yellowish or straw-colored. Sometimes the vesicles are sharp or pointed, and the fluid which they contain remains clear, like water, throughout the disease, in which case they are called Swine-pox. The disease is almost exclusively confined to children, appears but once, and is seldom of much consequence, as there is but little febrile disturbance or other sickness attendant. About the third or fourth day the vesicles burst, exude a little thick fluid, and then concrete into puckered scabs, leaving but slight marks behind. The eruption does not usually appear all at the same time, but is often followed by one crop after another, for several days The disease is contagious.

Treatment. — All that is necessary is a few simple remedies and a little care. A mild laxative or gentle physic once or twice, and the free use of Saffron, Catnip, or Sage Tea, sponging the surface of the body at night with warm Alkali or Saleratus Water to open the pores of the skin, and keep the patient warmly clad and free from exposure to cold, is all the treatment that is requisite in ninty-nine cases in a hundred. If there should be much fever, or the case should be bad, treat the same as Measles or a mild case of Small-pox.

BOILS.

A BOIL, called *Furunculus* in surgery, is a circumscribed inflammatory swelling, and very painful, immediately under the skin. It seldom exceeds the size of a pigeon's egg, and has a central core. Boils generally occur in persons of robust habits and in sound health, and mostly also in young persons. Sometimes, however, they appear in persons of feeble health. A Boil always suppurates or forms matter, and sooner or later will open or break, and discharge its contents. They are liable to occur after recovery or partial recovery from fevers, and are very common in cases of diabetes; but the precise influence exerted by the diabetic state upon the tissue, which results in their development, has not yet been ascertained. The bites of mosquitoes, if numerous, may occasion blood-poisoning and considerable derangement of the health, lasting for a considerable time, and ending in the formation of Boils of an obstinate kind in different parts of the body.

Treatment. — Boils seldom need any treatment, further than the application of some good adhesive and drawing Plaster, such as a plaster of Shoemaker's Wax, or one made of the white of an Egg and a little Flour. Should the person, however, be afflicted with several or numerous Boils at the same time, or in succession, showing great impurity of the blood, then it may be necessary to have recourse to some suitable medical treatment. In such cases, the patient should commence by taking an active Vegetable Catharic — a good dose, for instance, of the Anti-bilious Cathartic Pills; then follow with a dose or two of Sulphur and Cream of Tartar every day — say about a tea-spoonful of each once a day, in a little Molasses. This will keep the bowels open, and at the same time cleanse the system and purify the blood. It would be well also to drink freely for a few days, of Sassafras Tea, or, what is better, a tea made of Sassafras and Burdock Roots. This course of treatment, properly pursued, will usually be all that is necessary.

CARBUNCLE.

CARBUNCLE, called in medicine *Anthrax* and *Furunculus Malignans*, is a species of malignant Boil, being a livid, red swelling, with burning, smarting pain, which gathers, vesicates, and discharges

matter, and tends rapidly to gangrene. The tumor is often as large as a hen's egg, sometimes much larger, and generally has several fistulous openings, from which a thin, acrid, fetid matter exudes, with a large black core usually in the center. They usually appear on the back, loins, between or about the shoulders, and back of the neck. They are, of course, much more painful than ordinary Boils, and are usually attended with headache, more or less febrile symptoms, thirst, foul tongue, loss of appetite, languor, and restlessness. They occur mostly in persons past the middle age of life, and are owing to a vitiated and depraved state of the system.

Treatment. — In the early stage, at the commencement of the tumor, if you will apply Spirits of Turpentine saturated with Salt, by means of a bit of flannel folded two or three double and wet with it; or a plaster made of Wheat Flour, Salt and Spirits of Turpentine, you will generally be able to scatter or disperse it. At the same time take an active Hydragogue Physic, and keep the bowels open. But should it be likely to come to a head, or already have done so, you should then touch it well with some Caustic; the Caustic Potash is probably the best, which may be had at any of the drug stores. Burn it with this at the points where it seems likely to open, and apply poultices of Elm Bark wet with a strong decoction of Wild Indigo leaves, or Black Willow Bark, or of Smartweed. Sprinkle a little powdered Lobelia on the poultice, before applying. Renew the poultices two or three times a day, applying the Caustic well each time. When openings appear, insert the Caustic into them. If you can get the Vegetable Caustic, in powder, mix a little with double the quantity of powdered Blood Root, and sprinkle a little of it into the openings and apply the poultice again. If there should be a tendency to gangrene, or if the sore becomes large, angry, inflamed and offensive, wash with Pyroligneous Acid and Tincture of Myrrh, and poultice with Yeast, Charcoal and Elm Bark. The Caustic should be applied at each dressing, until the tumor presents a healthy appearance.

An excellent application, that may be used occasionally instead of the poultice, is composed as follows: Mix together ½ ounce, or 2 table-spoonfuls, of Spirits of Turpentine, the yolk of an Egg, a teaspoonful of pulverized Camphor, and sufficient Wheat Flour to form into a paste, and apply as a plaster on a bit of muslin or oiled silk. When the mortified or dead parts slough off, heal with the Black or Healing Salve, occasionally applying a poultice, especially at night, to reduce inflammation. If fungous or proud flesh appear, sprinkle on it a little powdered burnt Alum.

It may also be necessary to give some tonic and strengthening medicine, to sustain the system, especially if the disease continues a good while.

YAWS.

YAWS, medically called *Frambœsia*, from the French word *Framboise*, meaning *Raspberry*, is a negro disease, which affects the skin, appearing first in the form of small pimples or eruptions on different parts of the body, generally on the face, forehead, neck, and arms. These pustules gradually enlarge, and terminate in small blisters, sometimes half an inch in diameter, and exude or discharge a thin, whitish, ichorous fluid or matter, which gradually forms into a scab. The disease is contagious, being propagated by contact with the ichorous matter of the pustules. The same person will have it but once. It is supposed to have been imported from among the negroes of Africa. It is not very common among the negroes of this country, but appears occasionally on some of the plantations of the more southern States. It is quite common, however, among the negroes of Cuba. Though considered a disease peculiar to the negro race, white persons will take it, by inoculation, from contact with the poisonous fluid of the pustules.

Accompanying the appearance of the eruption, there are always more or less constitutional symptoms, such as rheumatic pains in the limbs, headache, great languor, general debility, loss of appetite, and sometimes chills alternating with fever. The period during which the eruption lasts may vary from a few weeks to several months, new crops of pustules appearing often, as fast as the previous crop have dried or disappeared. Sometimes, from some of the larger pustules, red fungous excrescences will appear, resembling red Raspberries, from which the disease (Frambœsia) takes its name. It also not unfrequently happens that on some part of the body one large pustule will occur, perhaps as large as a half dollar or even larger, which terminates in a disagreeable ulcer, and discharges an ichorous and ill-conditioned fluid, corroding to the surrounding healthy skin. It is called the Mother Yaw, and is apt to remain long after the other sores have disappeared, as a foul and indolent ulcer, which is to be treated as such.

Treatment. — The Yaws is not a dangerous disease, and is generally easily cured, if properly treated. To prevent the disease from spreading by infection, the negro should be kept entirely separate from the others, and in some healthy and well ventilated place. During the early or eruptive stage, the surface of the whole body should be bathed once a day with warm Lye or Saleratus Water, and warm Diaphoretic or Sweating Teas should be given freely, so as to aid nature in throwing off the disease to the surface, and in developing the pustules. The Diaphoretic Powders will be serviceable in

aiding the process, given in doses of 20 grains three times a day; or the Dover's Powders may be used in the same way. The bowels are to be kept loose by mild purgatives occasionally. It will also be well to put the patient in a Warm Bath about every other day, for half an hour at a time. He should also take exercise every day, but avoid exposure to cold. The diet should be light, and purely vegetable.

HEART THROBS.

STANDING, SITTING OR RECLINING.

DR. RICHARDSON, of London, says he was recently able to convey a considerable amount of conviction to an intelligent person by a simple experiment. The man was singing the praises of the "ruddy bumper," and saying he could not get through the day without it, when Dr. Richardson said to him: "Will you be good enough to feel my pulse as I stand here?" He did so. I said: "Count it carefully; what does it say?" "Your pulse says 74." I then sat down in a chair, and asked him to count it again. He did so, and said: "Your pulse has gone down to 70." I then laid down on the lounge, and said: "Will you take it again?" He replied: "Why it is only 64: what an extraordinary thing!" I then said: "When you lie down at night, that is the way nature gives your heart rest. You know nothing about it, but that beating organ is resting to that extent; and if you reckon it up it is a great deal of rest, because in lying down the heart is doing ten strokes less a minute. Multiply that by sixty, and it is six hundred; multiply it by eight hours, and within a fraction it is five thousand strokes different; and as the heart is throwing six ounces of blood at every stroke, it makes a difference of thirty thousand ounces of lifting during the night. When I lie down at night without any alcohol, that is the rest my heart gets. But when you take your wine or grog you do not allow that rest, for the influence of alcohol is to increase the number of strokes, and instead of getting this rest, you put on something like fifteen thousand extra strokes, and the result is, you rise up very seedy and unfit for the next day's work till you have taken a little more of the 'ruddy bumper,' which you say is the soul of man below."

CHOLERA.

NOTHING fills the public mind with more alarm and apprehension than this fatally malignant epidemic. The faint-hearted and the stout-hearted seem equally appalled. The Cholera! what sickening, terrible associations are connected with the very words! We remember the appearance of the epidemic in this country in 1832, and the panic and alarm that seized all classes of society. This dreadful scourge, which the Almighty has employed to destroy so many mil

lions of the human family, should warn us, "Be ye also ready." There are seasons in the history of nations and individuals, when the cup of their iniquity is full, and when the Supreme Ruler of the Universe can no longer mitigate or defer His anger. The pestilence is emphatically His own messenger. It was so in various epochs of the Jewish history, and has been so ever since. Has He not visited His favored people with these afflictions? and shall we expect to be exempt from them, and thus be debarred from advancement in holiness? God is not wanting in means and instruments to accomplish the purposes of His indignation. All secondary causes are in His hands, and He employs them to accomplish His designs of judgment, as well as mercy. Sometimes He selects men and makes use of them as the rod of His anger. See how many millions have been swept into eternity by wars and by ambitious rulers. Sometimes He selects for His purpose the material creation; the sun, moon and stars, the earth, the ocean, and the elements, all conspire as His ministers of rebuke. Fire and hail, snow and vapor, stormy winds and tempestuous billows, fulfill His word. Often He withholds the rain of Heaven, and takes away the fruits of the earth. Sometimes He sends the earthquake and the lightning, but most generally the awful messenger, the Pestilence. These things are calculated to teach solemn lessons, to still every passion, and elevate our souls to the contemplation of "that High and Holy One that inhabiteth eternity," existing in infinite majesty, living in the eternity of His own nature, reigning in the plentitude of His own omnipotence, forever sending forth the word which creates, supports, and governs all things.

This dreadful pestilence, like the Plague, made its first appearance in the East, and no reasonable doubt can be entertained that the disease is of Asiatic birth. In the year 1762 it prevailed extensively in Hindostan, destroying 30,000 natives. On the river Ganges, 8,000 of the pilgrims died in eight days of this disease; their great exposure to night air, and fatigue, was probably one of the predisposing causes of this great mortality, as this complaint did not extend to the adjacent towns. Cholera, however, continued to make its appearance occasionally in India, in a mild or more severe form, from 1762 up to the beginning of the epidemic of 1817. This mysterious disease was uncertain in its course, having no regular forms by which its location could be certainly determined, save that of its selection or preference for water courses. In Jessore, a district of British India, on the 19th of August, 1817, the Cholera made its appearance in a small town situated in the delta of the Ganges, near the Tropic of Cancer, one hundred and twenty-nine miles north-east of Calcutta. This country contains many marshes, and its appearance is very similar to that

which surrounds Savannah, in the State of Georgia; the soil is very fertile, producing large quantities of rice. At the period of the appearance of this epidemic, the rainy season had commenced, and the rice becoming damaged, the inhabitants of that country, who use this article of food instead of bread, supposed that the Cholera originated from this cause, as their discharges by stool resembled rice water, which is now well known to be the case in this disease. From the town of Jessore, the Cholera took a westward direction, destroying thousands in its march, until it reached Mymensing, a district watered by the Brahmapootra, where it prevailed two years, destroying 10,714 persons. It then visited Dacca, a district between and near the confluence of the Ganges and Brahmapootra, and from a document preserved in that city, in sixteen months, 6,355 were attacked with the disease, and 3,587 died. In the town of Sylhat, containing 20,000 inhabitants, 10,000 died. In the district of Nuddea, traversed by that branch of the Ganges called Hoogly, with a population of 1,300,000, the Cholera destroyed 16,500. At Nuetore, the disease was much less severe, owing to its being situated in a more healthy, dry atmosphere. In the country places, however, particularly in damp, moist, and low situations, the fourth of the sick generally died. In Bargulpore, only a short distance of fifteen miles, 15,580 died in sixty-five days; here the country was low and marshy, and filled with stagnant ponds. The epidemic then visited Benares, destroying 25,000 persons. In September, 1817, it visited the city of Calcutta, which is the seat of government of the British Indies. In three months and a half 35,736 inhabitants of the city and suburbs were attacked by the Cholera, and of these 2,750 died. It is estimated that 50,000 Hindoos died of this horrible disease, many supplicating for relief to their great Idol, Juggernaut, until death put an end to their sufferings. The ravages of the disease continued in this city during the succeeding year, and extended over the entire province of Bengal. It spread in a northwest direction, following the course of the Ganges, and finally reached the Himalaya mountains. Here its progress seemed for a time arrested, and as I have before said, giving a preference to water courses, it now passed from the Ganges to the Nerbuddah river, and following that stream to the coast of the Arabian sea, it reached Bombay on the 4th of November, 1818. Here it destroyed upward of 200,000 persons. It now traversed the whole of Hindostan.

It likewise spread southward to the Coromandel Coast, and the islands of Ceylon and Malacca, extending its course to the 20th deg. of south latitude. Passing through Siam, it visited China, scourged Canton and Pekin, then entered the eastern coast of Africa, at Zanguebar. In 1818 it spread north, south, and westward; in the sum-

mer of 1821 it reached the shores of the Persian Gulf, passed up the Tigris and Euphrates, and entered the city of Bagdad on the 18th of April of the same year. The city and the surrounding country suffered severely. During six months, 65,826 died of this disease. From Bagdad it crossed the desert to Aleppo, and by the report of the French Consuls, I have been enabled, from their official documents, to collect the following facts: The Imaum, or sovereign, informed them that 10,000 of his subjects had fallen by this disorder, and that in consequence of the people having exhausted their means of burying the dead, provision was made from the Imperial Treasury; hundreds of dead bodies being frequently exposed for weeks for want of the means of burial, and thousands died with fear, many in the most excruciating torture, without a friend to soothe or wipe from their brow the cold, clammy sweat of death. It now entered Astrakhan, a Russian town with about 45,000 inhabitants, situated on the Caspian sea, at the mouth of the Volga. At this period it seemed to have ceased its fearful ravages in these countries, but continued its fearful and desolating havoc in India and Chinese Tartary, destroying 70,000 persons.

After an absence of six years, it suddenly made its appearance again in the year 1829, in Orenburg, a Russian town of 20,000 inhabitants, situated on the Ural river, and 3,000 died in sixty days. It now made a second visit to Astrakhan, at the mouth of the Volga. It also spread through Circassia, ascended the Volga, and reached Moscow in September, 1830, and St. Petersburg in 1831. Passing along the coast of the Baltic sea, it visited Berlin and the principal towns of Prussia, and reached Hamburg in October, 1831.

This disease, for the first time, visited England in October, 1831, at a seaport town at the mouth of the river Weare, called Sunderland, and made its appearance in London on the 2d of March, 1832, and reached Edinburgh, in Scotland, about the same time. Calais was the first place visited in France. The visit took place on the 2d of April, 1832, and in a few days after the disease appeared in Paris. On the 8th day of June, 1832, the first case of Cholera appeared at Quebec, in Canada, and a few days after at Montreal.

On the 24th of June, 1832, the Cholera made its first appearance in the United States at New York. On the 5th of July it visited Philadelphia, and on the 9th of October, the same year, the Board of Health announced its appearance in Cincinnati; and about the same time cases occurred in Louisville, Kentucky; Madison, Indiana; and at St. Louis, Missouri. By the 1st of September, following, it reached New Orleans, and then visited Mexico and the island of Cuba; and leaving these countries, resumed its ravages in Europe. New York

and New Orleans, the latter city particularly, suffered severely from this disease.

On the 21st of October, 1848, the Cholera again made its appearance in England, and about the same time in the city of Edinburgh, in Scotland.

In the years 1849 and 1850, this disease was again very destructive in the United States. In Cincinnati the deaths numbered as high as 180 per day in the latter part of June, 1849.

The first victim of cholera in Chicago died in May, 1849, and was a Capt. Jackson; by Aug. 1st, the fatality reached its height in the death of thirty persons a day out of a population of some 25,000 persons. In 1832, the locality was only known as an Indian trading post, with Fort Dearborn as its central feature. In the years 1851, '52, and '53, cholera cases occurred, and in April, 1854, there were a few cases. On the 29th of June of that year, an immigrant train of Norwegians arrived in Chicago with six dead on board, and a seventh who died on being removed from the car, spread the contagion in earnest. As many as 1,424 died from cholera in 1854, and in 1855, 147 persons died.

Again, in 1865, the scourge invaded Europe, but from the Mediterranean ports, after having devastated Egypt, where 61,192 persons fell victims to it. It was very severe in Europe, 4,000 inhabitants of Paris being carried off by it in October, 1865. In 1866, England, Holland, Prussia, Hungary, and Austria suffered severely. It reached New York in 1865, but did not spread beyond the immigrants' hospital on Ward's Island. A fresh invasion was reserved for April, 1866, on board the ships Virginia and England, of whose passengers 281 died on the voyage. The next two months saw a few isolated cases in the city itself, and thenceforward it spread rapidly, taking off 1,195 persons up to Oct. 13, on which date the last case occurred. It was mainly confined to the principal cities. In the country, as a whole, altogether 10,805 deaths from this cause were reported during the year. In Oct., 1867, it reappeared, this time on board the United States ship Potomac, at Philadelphia, but was confined to the vessel. At New York the disease was reimported in immigrant ships, but was kept on board the vessels. The South was not so fortunate—Pensacola, Mobile, and New Orleans were all visited by the plague, which extended up the Mississippi and its southern tributaries, many deaths occurring in the Indian territory.

Now, 1884, with cholera at Toulon, below Marseilles, on the Mediterranean Sea again, and the fact in memory that this scourge has never ravaged Europe without sooner or later crossing the ocean to America, a word or two may be added with reference to the *cause*

of cholera: this the German commission headed by Dr. Koch, and lately at work in Egypt and India, has established is due to a bacillus resembling others previously known. [See the new article on page 487, &c., on "BACTERIA IN THE INTESTINES."] This is not exactly a new discovery, a theory somewhat like it having been propounded so long ago as 1831, by a leading physician of Berlin, Dr. Becker. It is now, however, accepted as conclusive, whereas heretofore it has rested on little more than conjecture.

My belief is that this disease is not contagious, as those persons who attended the sick in the various hospitals frequently escaped the disease. Those physicians who remained days and nights in the various hospitals, in constant attendance, worn down by fatigue and want of sleep, escaped.

Dr. Albers, in his report to the Prussian Government, observes that there have been cases fully authenticated, where nurses, to quiet timid females, laboring under the disease, have shared their beds during the night, and they, notwithstanding, have escaped uninjured. In many instances, physicians in the hospitals have, without any bad consequences, made use of the warm water which, but a few moments before, had served as a bath for patients laboring under the Cholera. But more conclusive facts still remain to be told, which I sincerely hope will be sufficient for any unprejudiced reader, and will entirely remove every apprehension and doubt in relation to the contagious nature of Cholera; for the TRUTH is, that thousands have fallen victims from FEAR, and that it is unquestionably a great predisposing cause, no physician of common sense will deny.

To prove that Cholera is not contagious, the official report of the medical committee, established by the Emperor of Russia, states that a physician who had received several wounds in dissecting the bodies of those who had fallen victims to the Cholera, continued his operations in various hospitals, and did not take the disease. One of the assistants in dissecting, having also repeatedly cut himself, was not attacked by the disease. Dr. Foy, an eminent physician of Warsaw, in a letter to the Royal Academy of Sciences, at Paris, states that he exposed himself in every manner to the infection. He infused into his veins the blood of an individual who was dying of Cholera; inhaled the breath of patients suffering under the disease, and tasted the matter vomited from the stomach, without sustaining any injury from the experiments, beyond a slight sickness at the stomach and slight headache.

STATE OF THE ATMOSPHERE. — Of the precise qualities of the air upon which Cholera and other epidemical maladies depend, physicians are entirely ignorant, except as manifested by their effects, and their

theories are all guess-work. But there are evident vicissitudes and distemperatures of the atmosphere, which give additional and even fatal force to the pestilential state of this disease, which we have in our power to measure, and, to a certain extent, to guard against. There are sudden changes from hot to cold, or the reverse; great rains after long drought, unusual continuance of winds from a certain direction, or very variable winds. The season of the greatest atmospherical vicissitudes, is usually that of the worst epidemical disorders; hence the autumnal months have been those in which the most fatal and wide-spreading epidemics have prevailed.

Although unable to say in what the pestilential condition of the atmosphere consists, we can often measure its range, and have conclusive evidence that it is not only circumscribed, but often, for a time, stationary. The immediate sustaining or exciting cause of this morbid condition of the air, would, on some occasions, *seem to depend* on the nature of the soil and the want of sufficient ventilation. Thus, in the visitation of Yellow Fever in various cities, the infected district, as it is usually termed, is well marked out, being low, made ground, or damp, wet situations, near stagnant ponds, or in close, confined apartments, or some place where decomposition of vegetable matter is going on from heat and moisture. People living in it, or going into it from other parts, are in danger of sickening with the Fever and dying from it; but the sick, whenever removed from it into a purer atmosphere, or into the country, do not communicate the disease to their friends or attendants, showing that it is not contagious, but that it is occasioned by a pestilential atmosphere. The Fever originating in prisons, called Jail Fever, is caused by a vitiated atmosphere; the air not being sufficiently renewed, and the breath of the prisoners continually impairing its purity. A Typhus Fever may be produced in the course of a few days, by shutting down the hatches of a ship in bad weather, if there be many people breathing between decks. We can, from these facts, easily conceive that any general deterioration of the atmosphere would be greatly aggravated by these local causes; among which a crowded population of a city would be most conspicuous. The fact of the limited range of vitiated atmosphere, within which the Cholera made its attack, would seem, on occasions, to be placed beyond a doubt. Men in perfect health arrive at a certain spot and fall down by disease; some never to rise again, and others to escape barely with life, after exquisite pain and torture. Armies have fled from the track of the pestilence, and have been safe out of the limits of that track. In other instances, the pestilential cloud seems to have been wafted into the midst of a stationary assemblage, as the camp of the Marquis of Hastings, on

the banks of the Scinde ; the disease, in this latter instance, rapidly abated after the removal of the encampment from the infected district to the high grounds of Erich.

During the prevalence of the epidemic at Orenburg, says Dr. Onufriey, a physician of extensive practice, there was scarcely a single inhabitant of this city, who had not some symptoms of disordered digestion. One complained of oppression and pain in the breast; another of pain in the head; some of nausea, or sickness of the stomach; some of diarrhea, or discharges from the bowels, and the like. "To me it appears," says the Doctor, "that the cause of these symptoms was a general invasion of the systems of the inhabitants by Cholera, which, however, was prevented from developing itself in its proper form, in a great many cases, by a regular manner of living, and other similar means." This may be considered as proved by the almost universal prevalence of symptoms of disturbed digestion there originating, without any appreciable cause, especially in persons newly arrived in the city, and their being relieved by the usual treatment.

Still we have, after all, conclusive evidence to show that sensible changes and extremes of atmospheric states, are powerfully contributing causes of the Cholera. In India it was clearly proved that the disease was more or less prone to occur in individuals, in proportion to their greater or less exposure to nocturnal cold and damps ; to great and sudden variations of temperature, and to fatigue. The Medical Board of Moscow, appointed to investigate the nature of the disease, reported "that the intensity of the Cholera was in direct ratio *to the dampness of the atmosphere*," the epidemic chiefly prevailing among the lower classes, who resided in moist and low situations. In Bengal, the physicians attributed the occurrence of the Cholera to the sudden changes of weather — strikingly unseasonable — humid soil, and a damp atmosphere. It is maintained in *Chambers' Edinburgh Journal*, that in electrical changes lies the cause of such migratory diseases as Cholera and Plague, and indeed of all epidemics. The remedy proposed, is the fumigation of the atmosphere, and the chief agent to effect it is Chlorine Gas, which is an ingredient in common Salt. Whole streets and towns can be fumigated with Chlorine Gas as easily as a single dwelling. In 1832 the town of Dumfarline, in Scotland, was affected with Cholera from the 3d of September until the 23d of October ; at that date, every street, lane, and alley, was fumigated with Chlorine Gas; within five days the pestilence was entirely gone. This was afterward done in several other towns with equal effect. It was ascertained, beyond a doubt, that every house in the infected district, in which Chlorine Gas was used as a disin-

fecting agent in the Cholera of 1832, enjoyed absolute immunity from the disease. Care, however, should be taken in using it, as the Gas, in a pure state, must not be inhaled into the lungs, as it is destructive of animal life. In all other epidemics it is equally good. In the city of Edinburgh it was used with great success, and in several other towns with equal effect. If this fact is fully established, this frightful disease will lose half its terrors.

In proportion as civilization and refinement, moral culture and protection against physical ills, make progress among a people, their chances of exemption from pestilential diseases increase. The period in the history of Europe the most fertile in calamities, was between the years 1040 and 1496, and is marked with thirty-two destructive plagues, their common interval being twelve years. But in the Fourteenth Century, the age when disorder and distress had obtained their greatest hight, Europe had been wasted with fourteen fatal and almost universal Plagues. In the two next succeeding centuries, governments began to reassume their vigor, and removed to a greater distance the scourge of tyranny in governors, no less than that of slavish submission in the people. In the Seventeenth Century, the Plague became still less frequent, until at length it entirely disappeared from civilized and Christian Europe. The general correctness of this view seems to be strikingly confirmed in the history of the Cholera. Beginning in India, it spread nearly over all middle and southern Asia, carrying off in a few years millions of human beings, most of them miserable, servile, and ignorant, who are debarred either the moral or physical energy to shun the disease, or to bear up under its first assault. Resigning themselves with slavish fear to a death which they conceived inevitable, they neither asked nor allowed of the administration of means of relief. In India the mortality was just in the ratio of the lowness of the scale of the inhabitants in society; servants and common laborers in the towns, and camp followers in the army, being the greatest victims; the native soldier next; while the Europeans and their officers enjoyed greater immunity from the disease. Those in the civil employ of the East India Company, and merchants, English and native, were sufferers in but a comparatively trifling degree. In China, the disease selected its victims from among such of the people as lived in filth and intemperance. Russia, with so many of her inhabitants, until recently, slaves of the soil, and her soldiers mere creatures of the most degraded slavery — debased in mind and morals — for the most part ill-fed and ill-clothed, and often covered with vermin — knowing little other excitement than that of drunkenness — next numbers her myriads of victims to the Cholera. With the progress of the disease westward to civilized

Europe, we find its diffusion to be less, and its mortality in smaller proportion to the population; Poland suffered less than Russia; Austria less than Poland; and Prussia less than Austria.

The nature of the differences between the liabilities of nations to be attacked by the Cholera, is still further confirmed by what we have learned respecting the comparative sufferings of the different classes of society. Dr. McCormick, speaking of the Cholera as it appeared at Tabriz, says that the disease began in that part of the city which is most low, filthy, and crowded with poor inhabitants; the disease advancing from quarter to quarter of it, finishing its ravages in the houses which were low, and in the parts most inhabited. The ill-clothed and filthy, the intemperate and those given to any excess, have constituted the greatest number of victims to the Cholera in all countries; while, on the other hand, the temperate and prudent most generally escaped, or suffered but a slight attack. To this fact, nearly all the physicians who have had an opportunity of studying the disease bear testimony. In the Russian soldiers, whose habits are filthy, and whose skin was, in many instances, covered with dirt of more than a line in thickness, the disease in general terminated fatally. A distinguished physician of Moscow, in his report, states that drunkenness, debauchery, bad food, and personal indiscretions, were incontestably predisposing causes. Dr. Rieche informs us that in China, the disease selected its victims from among such of the people as live in filth and intemperance. Dr. Darbel, a French physician residing at Moscow, thinks that this atmosphere is dangerous to those only who are predisposed to this disease from debauchery, indigestion, drunkenness, and to persons subject to bowel complaints, or suffering from cold or exposure. A physician of Warsaw states in his report to the government that the disease spared all those who led regular lives, and resided in healthy situations; whereas, those whose constitutions had been broken down by excess and dissipation, were invariably attacked. Out of one hundred individuals destroyed by Cholera, it was proved that ninety had been addicted to the free use of spirituous liquors. The agency of intemperance in predisposing to, and exciting the disease, is show by the fact, that after the decline of the epidemic at Riga, the occurrence of the Whitsuntide holidays caused a temporary augmentation of new cases, from the indulgence in intemperance and a material change in the ordinary modes of living, as all irregularities predispose to this disease, particularly the indulging in spirituous liquors; or whatever tends to lower the standard of health, favors the attack of the disease.

Personal, household, and neighborhood cleanliness are all of the

first importance in the presence, or probable visitation of Cholera. As to what shall be done for the household and neighborhood, we beg the reader's most careful attention especially to the chapter on *Sanitary Instructions*, and then to the department of *Sanitary Economy*, in this volume, and to the trite adage, "an ounce of prevention is worth a pound of cure."

Whether in the milder or severer forms, Cholera is usually ushered in by a period of premonitory symptoms, when the more distinctive features of the disease are not established, the case probably resembling one of common Diarrhea, or looseness of the bowels. Unfortunately, at this stage it is very likely to be neglected, the very stage when, in the severer epidemic form, most can be done to bring it under control. Either in ordinary Diarrhea, or in the severest cases, with Dr. Jordan's Cholera Remedy in the house (the formula for which is given on pages 1147 and 1148), you have a medicine which has proved itself both safe and reliable, when administered as he has directed, either in the milder or more extreme cases.

Whenever there is a reasonable suspicion that epidemic Cholera is threatened, the utmost precautions should be observed. If possible, avoid any situation where the disease is known to be prevalent, and be particularly attentive to diet, and especially to the purity of water used for drinking, or, indeed, for any domestic purpose.

See that the water is absolutely free from contamination, because of animal matter filtering through the soil or thrown into water-courses by sewers, etc. If water cannot be had in an absolutely pure state it should be boiled and cooled off before being used for drinking. Rain-water, filtered through a good filter of clean gravel and charcoal (such as are made in Rochester, N. Y., and kept for sale), will be found desirable, and, in all probability, absolutely safe also.

Many cases of Cholera and numerous local epidemics have been traced, in the most positive manner, to organic impurities of the drinking-water; no single cause of the disease has been established by so much evidence as this.

In a sudden and very severe attack of this most terrible disease, we see the cold stage of a fever in its highest conceivable degree of development; for, in fact, the collapse is so severe and so widely diffused, so manifestly deranging the action of every tissue and organ in the body, that, in too many instances, death results in a very short time. But Cholera, like other febrile affections, has not only its cold stage. If the patient lives, the terrible state of collapse at length gives place to great heat and dryness of skin, and

this *hot stage* in turn is followed by a *crisis* or critical change, when the kidneys and skin again resume action. The blood regains its color and begins to freely flow along its accustomed channels, and the various glands and tissues gradually recover from the shock they have suffered and return to their normal state. The patient soon becomes convalescent.

Symptoms. — This disease generally commences with a change of countenance, expressive of great anxiety, sickness at the stomach, colicky or griping pain, discharges from the bowels, slight cramps, and oppressed pulse. After a few hours' sickness the eyes look sunk in the head, the body becomes cold, the pulse quick, but scarcely perceptible to the touch; then perhaps violent cramps seize the muscles, especially the legs and belly; the skin and nails become of a purple color, and the skin is cold; the evacuations from the stomach and bowels, instead of being of a bilious color, resemble rice water. There is not vomiting in every case. In most instances, a Diarrhea or Bowel Complaint is the commencement of the disease, and the patient complains of coldness and cramps, with frequent discharges from the bowels.

Treatment. — The following prescription, as a mixture, will arrest the severest pain and Diarrhea. It has been tried in many of the most severe attacks, and generally afforded relief. Many physicians have used it with great success in their practice. Take pulverized Gum Guaiacum, ¼ ounce; ground Cloves, ¼ ounce; ground Cinnamon, ¼ ounce; best Brandy, 1 pint. Dose: from a tea to a table-spoonful, each half hour, until arrested.

The following prescription, though simple, when administered in the commencement of the painful symptoms, has proved successful: Salt, 1 table-spoonful; Red Pepper, 1 tea-spoonful: mix in ½ pint Hot Water.

Sulphur and Charcoal have been recommended, in proportions of one part of Charcoal to four of Sulphur.

Dr. Herrick, a physician of Chicago, says: "The result has been wonderful. All the premonitory symptoms, such as pain, a sense of fullness, unnatural movements, slight Diarrhea, etc., have uniformly yielded to a single dose of three or four grains of Sulphur. In cases where either Cramps, Diarrhea, or Vomiting have been present, and in fact where all these symptoms have existed in conjunction, the use of Sulphur, in the above-named dose, every three or four hours, has had the effect to ameliorate the patient's condition at once, and in a few hours to dissipate entirely Choleraic symptoms. So far as its efficacy has been tested in the worst stages of collapse, most satisfactory results have been obtained. In two or three cases of the kind, the effect has been to bring back the pulse to the wrist, restore warmth to the surface, and stop the profuse Diarrhea and Vomiting. In truth, the results obtained thus far have been such as to convince all of us, who have administered it and witnessed its effects, that

if any remedy deserves the appellation, this is the specific for Cholera."

The use of Sulphur as a remedy for Cholera is, however, no new suggestion. To Dr. Herring, a noted Homœopathic physician, of Philadelphia, appears to belong the credit of the original discovery. In a volume which we have seen, entitled *The Cholera and its Homœopathic Treatment*, Dr. Humphreys, the author, says: "According to Dr. Herring, Sulphur should prove a most efficient prophylactic for Cholera." Again he says: "Dr. Herring is of the opinion that Sulphur is an important remedy." But while giving the credit to Homœopathy, we would remark that it may be found that Sulphur, in large doses, is much more efficacious than in the small doses of the Homœopathists. Before much credit is given to any one, the reputed efficacy of the remedy should be further tested.

The following prescription is also recommended: Spirits Camphor, 3 drams; Laudanum, 3 drams; Spirits Turpentine, 3 drams; Oil Peppermint, 50 drops; mix, and shake well before using. Dose: one tea-spoonful in the best Brandy, to which add a little Sugar. Give a tea-spoonful every half hour, until four or five doses are given, or until relieved. Give warm Flax-seed Tea, and get the patient into a perspiration or sweat as soon as possible, by applying Hot Bricks to the feet, or any hot steam. The Spirits of Camphor, freely rubbed over the body, will be of service, at the same time excluding the cold air.

Chloroform has been used, in England, with success against Cholera. Mr. Hill, a surgeon attached to the Peckham Hospital, says he used it in ten cases of epidemic Cholera with complete success — six patients being cured, and four others in a state of convalescence. Two patients sunk, but these were already in the last agony when it was applied. He says: "Our habitual mode of treatment is to put the patient in bed, between very warm blankets; to give him a glass of Brandy in Hot Water, with Sugar and Spices; to rub him with a warm flannel dipped in a mixture of Soap, Camphor, Tincture of Opium, and Extract of Belladonna; to apply to the whole surface of the body bags filled with Hot Bran; to put the patient under the influence of Chloroform by inhalation, and to keep him under the gentle influence of it as long as the bad symptoms continue to reappear, which often happen when the effect of the Chloroform ceases and the patient recovers his consciousness. It is necessary to give, at short intervals, small quantities of Brandy and Water; for nourishment, Arrow Root, clear, or with Milk; and for drink, Milk and Water, or Soda Water with a little Brandy; to abstain from every thing else in the form of medicine, and trust to the efforts of nature to escape the infection of the disease."

Dr. Goodlett, an old and experienced Army surgeon, in relation to Cholera, gives the following practice, which, he states, proved very successful: "When all the fæcal matter is discharged, then comes the rice water, and in a few moments the collapse takes place. Then we are told that the patient is beyond the reach of the curative plan. I say not so. We now give astringents, say 1 grain of Opium and 4

grains of Kino, every half hour. To children we give strong Tincture of Cinnamon, say a tea-spoonful or so, every half hour. (This tincture should be made out of the bark.) We then strip the patient and throw the cold water over the whole body, hastily wipe dry, and put into blankets to be allowed to sweat. Give him or her a little well-boiled Corn-meal Gruel. The cold water coming in contact with the nitrogen on the body, forms a neutral; the cramps are instantly dissipated, and the regular circulation returns; the patient is cured. The cold, clammy feel of the skin, called sweat, in the collapsed state, is not sweat, but a condensation of the hydrogen of the atmosphere; the black and blue appearance is the air pressing on the surface of the skin, on the muscles, which are deprived of the lymph or watery parts of the blood. I now come to the great thirst. That is owing to an exhausted state of the system; the same is seen in persons bleeding to death; they call for water; and hunters tell us that deer and other animals, when wounded, run for water. If we are asked how we account for the Cramps, we answer it is by the sudden subduction of life through the blood. The same is seen in the bullock slaughtered by the butcher; it is not the small wound that is made, but the drawing off the blood suddenly. I give in such cases Cold Drinks, or allow my patients to eat Ice."

Dr. Graves, one of the most prominent of the English physicians, asserts that the Cholera is contagious. He strongly recommends the use of Acetate of Lead. He says: "A scruple of the Acetate is combined with a grain of Opium, and divided into twelve pills, and of these, one is to be given every half hour, until the rice-water discharges from the stomach and rectum begin to diminish."

In the treatment of this disease, there is no agent more necessary or efficacious than heat, especially dry heat. I believe many cases could be saved if they could at once be placed in a Turkish or hot-air bath. In the absence of heat in this form, recourse should be had to hot bricks, bottles and rubber bags filled with hot water, sacks filled with hot salt or hot sand. The philosophy of the action of heat is that it restores the healthy capillary circulation of the skin. The effect of the disease is to paralyze the skin, and allow the poisonous matters to be retained in the system, and to throw the congestion upon the mucous surfaces of the bowels, which accounts for the peculiar discharges attending the latter stages, and commonly known as rice-water discharges. Under the influence of heat, the healthy action of the skin is re-established, and the clammy, death-like sweat, and the wrinkled, shriveled appearance of the skin disappears. The rice-water discharges and the constant vomiting and retching cease, in case a profound collapse has not already taken place.

For the retching, mustard plasters and spice poultices to the stomach are useful. Hot drinks may be given at the same time the hot applications are made externally. Sometimes very hot water will be retained on the stomach when nothing else will. Rubbing the patient hard, to produce warmth and secure a better circulation, as is often done, I am convinced is not only useless, but absolutely injurious, as it exhausts the small amount of strength that remains. Perfect quiet and rest, with the

hot application, will do much more good. Opium and its various preparations must be given sparingly, or it will do harm. Small doses, say the one-eighth grain of Morphine, or one-half grain Pulverized Opium, or ten to twelve drops of Laudanum, are large enough doses for an adult. Morphine, in doses of one-eighth grain, combined with eight grains of Subnitrate of Bismuth, will sometimes stop vomiting and relieve pain and cramps. There may be added to this one-eighth grain of Ext. Belladonna, which also helps the circulation of the skin and stops the clammy sweats.—*Two previous paragraphs from Editor*, 1886.

[During the summer of 1849, when the disease prevailed as an epidemic, Dr. J. H. Jordan had charge of the Cincinnati Cholera Hospital from the 6th of June until it was closed on the 16th of August, and, as is well known, was remarkably successful in treating the disease. He used no Calomel, but relied mainly upon stimulants, and external heat. His "Cholera Remedy" is given on page 1147. He also used, with the best results, a preparation composed of Salt, Black Pepper, Vinegar and Warm Water, as follows: Salt, a heaping table-spoonful; finely ground Black Pepper, a heaping tea-spoonful; best Cider Vinegar, say a common-sized tumbler ⅓ full; and then filled up with Hot Water. As soon as the Salt was dissolved, and the preparation sufficiently cool, the whole was given to the patient in sups, or table-spoonful doses, about every minute or two, thus continuing till the whole was taken. Very often the patient would vomit it up; but when this was the case, the dose was repeated, which generally remained on the stomach. The same remedy was used in 1850 in various parts of the world—in some cases Cayenne Pepper being substituted for the Black—and always with extraordinary success. It is believed that Salt comes the nearest being an antidote or specific for Cholera of any thing known. It may be, and indeed should be, used freely in this disease; and where the patient can not swallow, it may be given by injection as a Clyster. If taken in the early stage, Salt, Warm Water and Vinegar, used freely, will cure ninety cases out of every hundred of epidemic Cholera.

Stimulating medicines, with a strong mixture of astringents, may also be given, especially after one or two portions of the Salt preparation have been given, and the stomach becomes quieted; such as equal parts, say an ounce, each, of Tincture of Camphor, Tincture Cayenne, Tincture Cloves, Tincture Kino, and strong Essence of Anise. Dose: a tea-spoonful every five or ten minutes, or a table-spoonful once in half an hour. Or the preparation described on page 1147. At the same time the patient must be kept quiet in bed, well and warmly covered, and if possible with Hot Bricks, Stones, or Boiled Ears of Corn, applied about the feet, and along the sides of the body, for the purpose, if possible, of getting up a healthy active perspiration. Get your patient into a warm perspiration, and he is on the direct road to recovery.— *Editor.*]

We lay it down as a general rule that the usual diet of a family, enjoying uniform good health, should not be materially altered because of Cholera alarms. The simple fact that a manifest change is made in the daily food, is calculated to awaken fears, suspicions,

and do harm. Articles known to be indigestible, or to offend the stomach and bowels, must be laid aside.

All should avoid excessive fatigue, and excesses of every kind. Exposure to bad weather, hot or wet, or to damp nights, will exert an unfavorable influence. If the slightest manifestation of uneasiness pervade the stomach or bowels, let none forget that neglect may prove fatal.

Care in respect to clothing is very important as a means of preventing Cholera attacks. Those who wear flannel would do well to persist in its use without intermission, or at least throughout the season of Cholera; and those who are not accustomed to it, will find much advantage in a soft flannel bandage applied moderately tight to the abdomen.

SCURVY.

THIS disease appears to consist in a vitiated state of the humors or fluids of the system, tending to ulceration and decomposition of the solid parts.

CAUSES. — Scurvy, on land, prevails mostly in northern latitudes, in low, marshy districts, or near where there is a great deal of stagnant water, and is caused probably by cold, moist air. It is also occasioned by long continued and constant use of salted provisions, salt and smoked meats, to the exclusion of vegetables — hence the reason of its prevailing so much among sailors. It may also proceed from the suppression of accustomed discharges, as the Menses; and from depressing passions. Neglect of cleanliness, confined air, unwholesome food, want of exercise, and any thing that tends to weaken the system, or vitiate the fluids, may cause it.

SYMPTOMS. — Generally the first symptoms are softening, ulceration, and bleeding of the gums, attended with an offensive breath, and perhaps frequent bleeding at the nose. There will also be a feeling of weariness, shortness of breath, and fatigue, after a little exertion. As the disease advances there will probably be swelling of the limbs, or a wasting away, and yellowish or livid spots will appear on the skin, or scaly eruptions. The face is generally pale, or of a leaden color. Finally other symptoms come on, as decay and looseness of the teeth, hemorrhages of blood from different parts of the body, obstinate ulcers, scaly eruptions all over the body, pains in the breast and bones, hectic fever, and the patient is carried off by Dysentery, Dropsy, or Mortification.

Treatment. — The only certain way of curing this disease is to reverse, as far as possible, that state or combination of things which

produces it. Change the habits, locality, and diet of the patient If it is thought to proceed from a sedentary life, or depressing passions, the patient should take daily exercise in the open air, or engage in some out-door employment, and be placed amid associations calculated to divert the mind and inspire cheerfulness. If the disease has been brought on by the long use of Stale and Salted Provisions, the proper remedy will be a diet consisting mainly of fresh Vegetables, fresh Bread, Milk, Cider, and Vegetable Acids. If fresh Vegetables can not be had, then pickled Vegetables are the next best. Sour-crout is an admirable remedy. As a drink, Buttermilk, and the Whey of Sour Milk are good. Cider Vinegar is also of service, and should be mixed with most of the food.

Besides the diet, particular symptoms and conditions will require particular treatment. For sore and ulcerated gums, use the Compound Tincture of Aloes and Myrrh, as a wash; or take Gum Myrrh, Aloes, and Extract Liquorice, of each, ½ ounce; pulverize, and add 4 ounces or a tea-cupful of Hot Water; stir; when cold, put the whole in a bottle, and add ½ pint of good Brandy; let stand four or five days, shaking occasionally, and then strain through flannel. Use this as a wash to the gums and ulcers of the mouth and throat, three or four times a day.

If there is Diarrhea or Dysentery, use the Neutralizing Physic and other remedies suitable to that condition. If Constipation, Laxative Medicines; if Pains in the Bowels, Fomentations, Emollient Poultices, and Anodynes, or Opiates; if oppression in the Chest and difficulty of Breathing, Mustard Plasters and Relaxing Expectorants; if Pains or Contractions in the limbs, Swelling of the Joints, etc., steam over Bitter Herbs, and use stimulating and emollient Liniments, with friction. If the Skin becomes affected with spots, scabs, or scales, wash the whole surface once a day with a water made acid with Vinegar, or a little Muriatic Acid; if ulcers form, apply a Poultice of Yeast and Elm Bark, and heal with the Green, or other good Salve.

It will be well, also, for the patient to drink from a half to a pint, daily, of a decoction of such articles as Burdock, Yellow Parilla, Marsh-mallow, and Dandelion Root.

CANCER.

THIS is one of the most fearful, and one of the most dreadful diseases to which the human family is liable. While its formidable nature classes it with those which ought at once to be placed under proper medical care, the same reason renders it most important that its first symptoms should be known and attended to, while there is yet time to save life. Cancer usually commences as a hard tumor, unaccompanied with inflammation, and either painless, or the seat of

intermittent shooting pains. It more frequently occurs in females than in males, and attacks the breast oftener than any other organ. I have known several cases of Cancer of the Womb, one of which I treated successfully by a surgical operation, in New Orleans. In men the genitals are more liable to be affected, as well as the chin, nose, and lips, of old persons. Cancer sometimes affects the stomach, but this is of rare occurrence. Cancer seldom takes place in early life, rarely under thirty years of age. When from the nature of a tumor, its hardness, situation, or age of the patient, danger is feared, and particularly if there be any hereditary tendencies to this disease, attention should be given without delay; neither time nor expense should stand in the way of procuring that assistance which may not only preserve life, but save from a lingering and painful death. By permitting this disease to run on its course, the glands adjacent to the Cancerous affection become tainted, and then follows a gray-looking ulcer, discharging thin, fetid, watery matter, the seat of shooting and stinging pain. The edges of the sore are generally hard, thickened, and extremely painful. The flesh which surrounds the ulcer, or sore, will present the appearance of the teeth of a saw.

A Cancerous sore has a peculiarly offensive smell. If you have ever seen one of these sores, or smelt this offensive odor, you can never afterward be mistaken in the disease. Cancers proceed, in general, from Scirrhous Tumors, Warts, Pimples, and other hardened swellings. Its first appearance usually is a hard, irregular lump, forming under the skin, in the breasts, and in the womb of women, and in the lips, face, tongue, palate, testicles, and cheeks generally of men. When it attacks children, which is seldom, the eyes and nose are mostly the seat of this disease. Any part of the body may be the seat of Cancer, although the glandular parts are the most subject to it. Remember, when a Scirrhous Tumor upon the breasts is attended with a burning, shooting pain, and the skin over it has become dusky, purple, or livid color, it has become a confirmed Cancer. The tumor sometimes grows to large size; it has an irregular, knotty appearance, the nipple sinks in, and there are seen purple veins running in every direction over it. Any one, who, from a scrofulous habit, is predisposed, from hereditary taint, to Cancerous affections, should be extremely cautious in irritating any little Warts on the face, or other parts of the body, at particular periods of life, as by doing so they may become Cancerous. But if left alone, and not irritated, they will often be dormant during the whole life of a person.

Just before these tumors or lumps break out into an open Cancer the skin around it will become contracted or wrinkled, and its surface will have a black and blue appearance. After it becomes an open

sore, and the thin, watery, eating fluid begins to run from it, the proud flesh will rise up above the skin, and often grow into large excrescences or lumps. The raw surface will often bleed and look angry. The pain at the same time increases, and the patient grows thin. In some Cancers, particularly of the breast, nearly all of the glands of the body will become affected. The skin and muscles, for a considerable distance around the Cancer, will become hard, stiff, and contracted. The axillary glands and arms frequently become stiff and swell, and the whole body, after a length of time, will partake of the disease. I have known, sometimes, an entire loss of appetite; at others, a ravenous one. In some constitutions, the progress of Cancerous affections is slow, and confined to one particular point, while in others it is rapid, and the declining health is daily perceived.

The Rose Cancer, or, medically called, *Fungus Hematodes*, assumes a variety of forms, and attacks all those parts which are the seat of the true Cancer. In the commencement of it, it is only a soft tumor, or swelling of a part, very elastic to the touch, and often very painful. When it ulcerates, it spreads out into a form which resembles a red rose, rises considerably above the surrounding surface, and presents a large mass of bloody fungus or sponge-like substance. It is very apt to bleed, and always presents an unsightly appearance. The same remedies which are employed in the treatment of the true Cancer, are employed in the cure of this.

Treatment. — A vegetable diet and a strictly temperate life will tend greatly to delay the progress of this disease. One of the first and most essential changes that can be produced in the constitution, is by a change of diet. Every article of food or drink which aggravates or increases inflammation in general, will aggravate the condition of Cancer; and on the contrary, every species of food which resolves and abates inflammation, will assist the condition of a Cancer. All Salt Food, Pork Meat, and stimulating things of every kind, aggravate the disease. In a word, the drink should be Water and the food Vegetables. The usual remedies heretofore have been to remove Cancer by a surgical operation. This, in Cancers of the lips, tongue, and face, will often effect a cure; but in the breasts, and other large glands, the operation is not so successful. The operation, however, will often delay the progress of this disease for a time. Cancer can not be said to be propagated by contact; but this should be avoided as much as possible — in the intimate relation of husband and wife especially.

At the sitting of the Academy of Science, in Paris, M. M. Bauphietuy and Adelde Roseville, surgeons of great distinction, addressed to the Academy of Medicine a detailed note on the Animalculæ, or small animals resembling lice, which are found in all the Cancers that they have examined. These gentlemen have sought the means which are best fitted to destroy these Animalculæ, and their experi

ments have led them to recommend the following different articles as washes by which these small animals may be destroyed: Brandy, or the Tincture of Iodine, or Concentrated Solutions of the Double Chloride of Mercury, or the Chloride of Gold, or of Arsenic, or of the Salts of Copper, or of the Nitrate of Silver; each, or any one of these articles, will kill these small animals, medically called Animalculæ, in the short time of twenty minutes, or half an hour at most, and unless they are destroyed by some such acids, it will be impossible to cure this disease, and to a want of knowledge of the proper remedies, may be attributed the failure of curing this fatal and tormenting affliction.

The application of raw Cranberries, applied as a poultice to the sore, will cure this most inveterate disease. We know of many cures performed by the use of these berries, mashed and applied as a poultice. A lady of our acquaintance had a Cancer in her breast, which had become as large as a pullet's egg, and was an inch below the surface of the skin. In this case, it was an hereditary disease, and she regarded it as a death-warrant. She was persuaded, however, to try the Cranberries, and they effected a cure. The Cranberries were mashed in a mortar; spread on a cloth and laid on, changing the poultice three times a day. In two or three days it became so sore that it drew out pustules that filled like the Small-pox. This process was renewed with the same effect, until the whole was drawn away, the Cancer becoming softened and decreasing in size at every application, until it finally disappeared. The virtues of Cranberries are but imperfectly known. They are cooling and useful in removing inflammation, and have been known to cure an obstinate Sore Throat. We have never known them tried, but are persuaded they might be useful in Bronchitis. The Tuscaloosa *Observer* states that a Mr. Bell, who suffered for eight years with Cancer in the nose, was entirely cured by using a poultice of the common Cranberry. It is so simple and innocent that every one afflicted with the disease should try it.

Another remedy for this horrible disease, has been accidentally discovered. The account states that a jeweller, who had a Cancerous pimple on his cheek, having occasion to dissolve some gold in Nitro-muriatic Acid, rubbed it several times unconsciously with his impregnated fingers, and was surprised to find it speedily change its appearance, and shortly after disappear. M. Reeamier, suspecting the cause, made several uniformly successful experiments with the same mixture. Thus has accident discovered a new caustic for Cancerous affections. The proportions which he adopts are, 1 ounce of the Acid to 6 grains of the Chloruret of Gold. This Acid may be obtained at any drug store.

Col. Ussery, of the parish of De Soto, informs the editor of the Caddo *Gazette*, that he fully tested a remedy for this troublesome disease, recommended to him by a Spanish woman, a native of the country. The remedy is this: Take an Egg and break it; pour out the white, retaining the yelk in the shell; then put in Salt, and mix with the yelk as long as it will receive it; stir them together until a Salve is formed; put a portion of this on a piece of Sticking-plaster,

and apply it to the Cancer about twice a day. He has tried the remedy twice in his own family with complete success.

The Carrot Poultice, applied to the sore, to be renewed twice a day, will cleanse and remove the disagreeable smell, and ease the pain. This application should be grated to a pulp, and softened well with water, before it is put on the sores.

The following remedy cured Mary Carrol, of Louisville, Kentucky, who was afflicted with Cancer of the Breast for many years. It was the most dreadful case I have ever witnessed — the odor, or smell, was the most offensive that can be conceived. In three months she was entirely cured. Her daughter's nose was likewise eaten off by this disease, and the same remedy effected her cure: Red Oak Bark, 2 ounces; White Oak Bark, 2 ounces; Poke Root, 2 ounces; Persimmon Bark, 2 ounces; Black Haw Bark, 2 ounces; Blackberry Root, 4 ounces; Sheep Sorrel, 2 ounces; Red Clove Blossom, 2 ounces; Cinnamon Bark, 1 ounce; boil in 4 or 5 gallons of Water to 1 gallon strain, and add to each quart 1 ounce of Borax and 1 ounce of Alum, wash the Cancer with this three or four times a day, and make a Salve of Mutton Suet, Beeswax, a small lump of Turpentine, and Sweet Gum, and apply to the sore.

The following remedy has cured some of the most dreadful cases of Cancer: The Sheep Sorrel dissolved in water, and allowed to settle, when this deposit, after soaking for some time, is spread on the Cancer. The frequent application of Sheep Sorrel, though apparently a simple remedy, will be found to produce, in a short time, a great benefit in this disease.

Mr. Thomas Tyrrell, of Missouri, says he has effectually cured himself of an obstinate Cancer, "by the free use of Potash made from the ashes of Red Oak, boiled to the consistence of Molasses, used as a poultice, covering the whole with a coat of Tar. Two or three applications will remove all protuberances; after which it is only necessary to heal the wound with Common Salve." Or,

Take the narrow-leaved Dock Root, boil it in soft Water, and wash the ulcer with the strong decoction, as warm as it can be borne; fill the cavity with the liquor for two minutes; then scrape the hulk of the root, bruise fine, put on gauze, and lay it over every part of the ulcer; dip a linen cloth in the decoction, and put over the gauze. Repeat this three times in twenty-four hours, and at each time let the patient take a wine-glass of the Tea made of the root, with one-third of a glass of Port Wine, sweetened with Honey.

SCROFULA, OR KING'S EVIL.

THE name Scrofula is derived from *Scrofa*, a hog, because it has been observed in swine. It is called the King's Evil, because Edward the Confessor, and other kings of England and France, pre-

tended to cure it by the touch. The last that practiced this delusion was Queen Ann; in the year 1707, she issued a proclamation in the London papers, inviting her Scrofulous subjects to the royal touch. This disease chiefly affects the glands, particularly those of the neck, and consists of small hard kernels under the skin or the neck, and under the jaw, where they remain for a long time, often gathering and breaking, and discharging matter. The eyelids are often attacked with this disease, when they thicken and become red or inflamed, discharge a thick mucus, and the eye is rendered painful. Many persons have Scrofulous constitutions or temperaments, which they inherit from some one of their progenitors.

As to the causes of Scrofula, there can be no doubt that hereditary predisposition is the cause above all others. That a predisposition arises in children from their fathers having had this disease, is undoubted. In children, the glands (those of the neck, chest, and belly), are the most usual seat of Scrofulous disease. In adults, or grown persons, the Lungs most generally suffer. Of nearly nine thousand Scrofulous children examined in the various hospitals in England, over thirty-two per cent. had light hair and eyes. The skin is dry and hard, and of a greasy exhalation; and has a fetid and sour smell.

Treatment.— Bathing in Salt Water is one among the best remedies in this disease, and drinking Salt Water so as to keep the bowels gently open. A most valuable medicine in Scrofula is 60 grains of Hydriodate of Potash, and 2 grains of Iodine. Iodine has been highly recommended in France, Germany, and England, for the numerous cases which it has cured of Scrofula. The next best form for using this medicine is the tincture, taking from 20 to 30 drops two or three times a day, in a small tea-cupful of a decoction of Marshmallow Root, or Sarsaparilla. As an outward application to the swelling or hard kernels, rub them with Opodeldoc or new Rum. If this does not remove them, get a plaster of White Diachylon, which may be had at any apothecary shop; cover the parts with it, and let it remain, as it checks the growth of the swelling. If they become sore or inflamed, the swellings must be poulticed until they become soft and the skin white, which shows that they contain matter, and must be opened with the lancet. After the matter is discharged, the sore should be dressed with salve made of Beeswax and Sweet Oil; when another lump forms, it must be treated in the same way. Before the tumors or swellings become sore and inflamed, wash them several times a day with a solution of Muriate of Lime, or Soda. These washes are new remedies, and possess great power in scattering indolent and inactive swellings. A strong tea made of Sarsaparilla Root, and drank four or five times a day, from a gill to half a pint at a time, will cure this disease quicker than any other vegetable remedy.

One of the most important and useful remedies in this disease, is to keep the skin clean; and the sea air is, beyond all doubt, very beneficial in restoring the system to a state of health. All sores heal better in sea air than any other; and it is a well known fact that children, who play and run in the open fields, where they breathe the pure air, preserve their health and prevent disease. Exercise gives strength to the flesh, hardness to the bone, and energy to all the fibers. Inactivity produces despondency in the mind, invites disease, and produces feebleness of the body.

A valuable outward application has lately been discovered for dispersing the Scrofulous Tumors, or swellings of the glands or joints, by rubbing the part gently with it, or by applying flannel moistened with it over the part. It is composed of the following ingredients: Take of Iodine, 20 grains; rectified Oil of Amber, 4 drams; rectified Spirits, 2 ounces; mix. On adding the rectified Oil of Amber to the Iodine, a combustion or flame takes place, and when this is finished, the Spirits should be added.

Having heard of many extraordinary cures effected by a remedy known by Mr. N. Longworth, of Cincinnati, I called upon him, and he very kindly furnished me with this most valuable remedy. "I have," says Mr. Longworth, "frequent letters requesting me to send the recipe for the cure of Scrofula and Old Sores. As I have never known the remedy to fail to cure very speedily, much good may result from a republication of the remedy in your book. It is only a year that it has been used for Old Sores. I inclose a letter received since I wrote the above, which you may deem of public benefit to publish. The Sores should be washed clean with soap and water, each morning, before applying the remedy. Take 1 ounce of Aqua Fortis, put on a plate, and lay in it two copper cents, when it will effervesce strongly; when it ceases, add to it 2 ounces of pure strong Vinegar, or use 1 table-spoonful of Aqua Fortis and 2 of Vinegar. Leave the cents in. Apply to the Sores, twice a day, with a soft brush or rag. It should and will occasion pain; if it is too severe, a little pure rain water may be added."

A LETTER TO NICHOLAS LONGWORTH, ESQ.

CINCINNATI, July 12, 1856.

DEAR SIR: With pleasure and gratitude I avail myself of the present opportunity to acquaint you with the gratifying results from the use of your valuable prescription for the cure of Scrofula. In my case it has done wonders, for to all appearances it appeared to be a hopeless one, inasmuch as it originated from a sprain in the ankle many years ago, when yet a boy, and growing worse from year to year, until I lost the use of my foot altogether. My leg had dwindled away to half the thickness of the other, which compelled me to use a crutch and wooden leg. When I commenced using your prescription, I had two running Sores on my ankle; in the course of twelve months one healed up, and in two months more the other. I am now enabled to use my foot in walking, with but slight assistance from a

cane; wooden leg and crutch both discarded. I felt it my duty to inform you of this, prompted by deep-felt gratitude to you for giving publicity to this remedy, and likewise for the sake of such as may be similarly afflicted.

Yours, truly and gratefully,

E. T. PORTER.

I attended a child in Louisville, Kentucky, about four years of age, who was attacked with this disease, whose neck was bent to a fearful curve, the head resting on the left shoulder, and unable to move it; the system laboring under general debility. The remedy which relieved it, is as follows: Take 60 grains of Hydriodate of Potash, dissolve in 4 ounces of Water, and 1 table-spoonful given the child, every morning, for ten weeks. The child was perfectly restored to health, and its neck became straight. After the cure, this medicine was more gradually given as an alterative, and in smaller doses, for some time. The child's health and strength gradually improved, under this treatment, until it was entirely cured.

The Yellow Dock has also gained great celebrity, with eminent medical men, as an alterative, and will be found highly beneficial in this disease. From its properties being well known, its general use is not only perfectly safe, but judicious. It may be called one of our most valuable remedies, and one most successfully used in Scrofula. The entire virtues are extracted from the root.

VENEREAL DISEASES.

SYPHILIS.

THIS is the worst form of Venereal disease, and is very generally known by the more common name of *Pox*. It comes properly under the head of those complaints denominated "Secret Diseases," so often met with in medical advertisements. It is, even in its mildest form, a wretched and disgraceful disease — one which is always to be dreaded, and with which the guilty sufferer — for he is generally guilty — is always ashamed to acknowledge himself afflicted; while, if neglected, or improperly treated, and the virus allowed to enter the system, and the disease thus to become, as it is termed, *constitutional*, giving rise to what are termed constitutional or secondary symptoms, it becomes a most loathsome and filthy disease, eventually

undermining the constitution, destroying the general health, and sapping the very foundations of life, rendering the sufferer a mere wreck in both body and mind — disgusting to himself, and detested and shunned by all around him! It is difficult to conceive why so horrid a disease should exist, except on the ground that it is a direct consequence, or punishment, for the criminal violation of the moral and physiological laws of our being. If it were always confined to the guilty alone in its baneful effects, and the virtuous and innocent did not sometimes have to suffer, it would be far less lamentable, and would present a much less pitiable spectacle to the eye of humanity. But how often does it happen that an amiable and virtuous wife, and sometimes, alas! innocent children, are compelled to suffer what is often worse than death itself, from the effects of this loathsome disease, communicated to them — or to her and thence to them — by him whom they are compelled to call husband and father! But such are the laws of our social, moral, and physiological being — the innocent often have to suffer from being associated with or united to the guilty.

This disease is communicated by infection — that is, by actual contact with the specific virus — and is usually acquired by having sexual intercourse with one who has the disease at the time. It is, in its first or primary stage, located entirely in or upon the genital organs, and is therefore, at first, simply a local disease. If promptly and properly treated at this stage, it may be so completely eradicated as to prevent it from entering the circulation, vitiating the system, and becoming constitutional. The disease is properly divided into Primary and Secondary or Local and Constitutional Syphilis. The word Syphilis comes from the Greek word *Siphlos*, and means *Filthy Disease.*

I have said that this disease can only be communicated by actual contact with the specific poison; there is one exception to this, however, and that is where it is communicated by a pregnant female, who has the disease, to the child in her womb — in which case the child will have the disease in the constitutional form from the start, and will very likely be incurable. It can not be communicated by the breath, nor apparently through the medium of any of the ordinary natural secretions; but if a person prick himself with an instrument on which there is some of the Venereal poison, or cut himself with a scalpel while dissecting the body of a person who died of the disease — as is sometimes done by medical students — he will be apt to take the disease in its worst and most fatal form.

Primary Symptoms. — The first symptoms of the primary form, when taken in the usual way, are the appearance of what are called

Chancres, which make their appearance on the genital organs — in the male, on or about the head of the penis; in the female, on and sometimes a little within the external edges of the birth-place, or labia. They begin generally in the form of a small pimple, or vesicle, which soon enlarges, breaks and ulcerates. They are generally not numerous — usually two or three at most, sometimes but one, and do not extend or enlarge very rapidly. The true Chancre is apt to assume a circular form, with excavated or hollow surface; raised, hard edges; indurated or hard base, and the matter which forms in it, is tenacious, and sticks close to the ulcer. There are what are called the Superficial and the Phagedenic Ulcers, which sometimes appear; they are, however, but different varieties of Chancre — the first being more superficial, having raised edges, but without the thickened and hardened base, and most usually appear on the prepuce or foreskin of the penis, and sometimes on the outside of it; the second, or phagedenic variety, is a corroding ulcer, of a dark, livid or purple color, with but slightly raised edges, which are of a dark blue or livid crimson color. It sometimes begins as a black spot, which rapidly increases and sloughs off, exposing the surface of the ulcer. This is the worst form of the Venereal Ulcer, very painful, more rapid in its progress, and, if neglected or improperly treated, may destroy the whole penis in a very short time. It is now admitted by the most experienced physicians in this disease, that this species of ulcer is only made worse by the use of Mercury — a fact which will probably hold good in all forms of Venereal Disease. More constitutions have been ruined by the internal use of Mercury, in some form or other, in trying to cure this disease, since the days of Paracelsus, who first introduced its use, than by the disease itself!

Another symptom belonging to the primary stage, is what is called Bubo. This is an inflammation and swelling of the inguinal glands in the groins; sometimes both, but most usually but one. If neglected or improperly treated, the gland will gather and break, or have to be lanced; but if attended to in time, the swelling can generally be scattered and driven away. Buboes, though quite common in this disease, do not always take place; sometimes, though seldom, they precede Chancre, and sometimes they do not appear at all; sometimes also the disease may proceed and become constitutional or secondary, the virus passing through the system, without the appearance of any Bubo, or swelling in the groin. And sometimes even the disease becomes constitutional without showing any of the primary symptoms, such as Chancre and Bubo — the first symptoms being, perhaps, sores in the throat, nose, or on the lips, and Venereal

eruptions over the skin in different parts of the body Such cases, however, occur but seldom.

As to the time which generally elapses after exposure to the disease until the first symptoms appear, this is usually within a few days — say from three to nine days; but sometimes, owing probably to some peculiarity in the person's constitution, the disease does not show itself for a much longer time, even for some weeks. Cases have been known where it did not exhibit itself for more than a month after exposure; but in the greater number of cases Chancres will appear, if at all, within seven to nine days.

The Syphilitic disease, as has been said, is communicated by infection, or actual contact with the virus; it will be communicated to the system, or any part of it, by coming in contact with any sore, cut, or abraded surface; and may be, and often is, conveyed by the fingers, after handling or touching the Venereal Sore, to the eyes, nose, lips, etc., or if there be any little sores on the fingers, the poison may be absorbed there, and produce the most alarming results. Physicians, therefore, as well as the patient, and every one who has anything to do with the treatment or handling of Venereal Ulcers, should be extremely careful in this matter, and make use of proper caution and cleanliness.

Secondary Symptoms. — The secondary or constitutional symptoms at first make their appearance in the throat and on the skin. They occasionally occur as the first symptoms — that is, are not preceded by any of the primary symptoms; but this is very seldom. They most usually follow the primary symptoms, where the disease has been neglected or badly treated, and generally not until some weeks after the appearance of the primary symptoms — unless the disease is entirely neglected; in which case secondary symptoms may appear within a few days after the primary.

The first symptoms of the Constitutional Form are, generally, the appearance of ulcers in the throat, sore throat, soon followed by a breaking out on the skin of little red, scaly pimples at first, perhaps, which usually soon change to a copper color, often enlarging or running together; at first they are dry, the skin peeling off; and they may remain dry and scaly throughout, or change to a sort of ulcers, exuding a yellowish colored matter, if the disease is allowed to continue, gradually spreading over the face, body, arms, and head, giving the victim a most unsightly and loathsome appearance.

When the Venereal Virus attacks the throat or palate, the roof of the mouth becomes red and inflamed; patches ulcerate, and thence creep to the palate, destroying it, if not cured; then it communicates to the nose, destroying the cartilage or gristle which separates the

nostril, when the voice becomes changed into a nasal twang, and a most offensive discharge is secreted. Sometimes the tongue, the inner part of the lower lip, and lower gums, are affected with these Venereal Ulcers; and last, the larynx or top of the wind-pipe, which destroys the voice, and the patient speaks in a low whisper. The nose is next attacked; an incrustation or scab forms in the nostril; after a short time, on blowing the nose, a quantity of blood, mixed with matter, is discharged, followed in a few days by similar incrustations, when ulceration takes place, and gradually lays bare the bone, and occasions it to exfoliate, when horrible deformity or loss of the nose is the result.

The last and closing remarks upon the symptoms of Venereal, are on the bones, which do not escape the ravages of this hydra-headed pestilence; the joints enlarge, become painful, and the surfaces of the bones tumefy, forming what are called Nodes, while the interior yields to the process of absorption, or rots away, constituting what is called Caries of the Bones. The ligaments and tendons are also the seat of great pain, often depriving the person of sleep. It is extraordinary the length of time that some constitutions bear up against this horrible scourge of the human race; and the rapidity with which others sink under it. It is, therefore, important that no time be lost in seeking and adopting proper remedies. When the disease is suffered to proceed, and not counteracted by proper remedies, the unfortunate victim will, in the course of time, be afflicted with severe pains, but more particularly in the night-time; his countenance will become sallow and haggard; his hair fall off; lose his appetite, strength, and flesh; rest much disturbed at night, with slight fever, and a gradual loss of all the muscular energies.

What a lesson is contained in the following from the Sacred Scriptures, Book of Proverbs, chapter fifth. Read and reflect. I can conceive of no language more impressive with meaning than that in which these truthful sentiments are expressed:

"My son, attend unto my wisdom, and bow thine ear to my understanding, that thou mayest regard discretion, and that thy lips may keep knowledge; for the lips of a strange woman drop as an honey-comb, and her mouth is smoother than oil; but her end is bitter as wormwood; sharp as a two-edged sword. Her feet go down to death; her steps take hold on hell. Lest thou shouldst ponder the path of life, her ways are movable, that thou canst not know them. Hear me now, therefore, O ye children, and depart not from the words of my mouth. Remove thy way far from her, and come not nigh the door of her house: lest thou give thine honor unto others, and thy years unto the cruel: lest strangers be filled with thy wealth;

and thy labors be in the house of a stranger; and thou mourn at the last, when thy flesh and thy body are consumed, and say, how have I hated instruction, and my heart despised reproof."

In the treatment of this complaint, I have had great practical experience, and have every reason to believe that one-third, at least, of the constitutional effects have been produced by injudicious treatment and the effects of Mercury, and not entirely from the Venereal Poison. On examining the Secondary or Constitutional Symptoms, I have found them increased to a fearful extent by drinking spirituous liquors, sexual intercourse, exposure, and excesses of various kinds, which have had more or less tendency to spread the disease while under the effects of this active medicine. With regard to the use of Mercury in this disease, I admit, when properly used, that great benefit may be derived from it; but the rash, indiscriminate, and unqualified abuse of it has been productive of infinite mischief, not only in the hands of quacks, but likewise educated physicians, and even where patients have endeavored to cure themselves by the use of the advertised nostrums, professing to be entirely vegetable and harmless, and yet composed of the most active compounds of Mercury, by which thousands have been mercurialized and their constitutions entirely destroyed. We see every day the bad results to those who have been ensnared by the specious pretentions of uneducated persons, who pretend to cure the disease, whose indecent advertisements pollute the walls of the various large towns and cities, and obtrude themselves, at every turn, on the gaze of the passenger. At one time Mercury was declared to be a specific in all Venereal disorders, hence it was given in all cases and forms of Venereal affection, or supposed Venereal complaint, even in the simple form of Gonorrhea, and pushed to a frightful extent in many instances; the patient being often salivated, until he or she spat several pounds of saliva in the day, till the face was swollen, and the teeth loosened, and the tongue swollen and hanging out of the mouth; in this dreadful situation the learned quack, or mercurialist, wisely concluded that he had affected the patient's constitution, and with good cause, too; for the constitution was in general so fully affected, that the patient was seldom afterward free from disease of the bones, mercurial eruptions, and various other diseases to compensate him for the loss of the Secondary Venereal symptoms; which were not unfrequently retained into the bargain. At present, fortunately for those afflicted with this disease, a more rational system is adopted. Mercury, though looked upon as a specific, is not pushed to the fearful extent it was formerly. The Medical Profession differ in opinion as to the best method of treating Venereal complaints. Some condemn the

use of Mercury, in any form; while others prescribe it, believing it to be the only certain method of curing the disease. Now, the truth is, that neither of these opinions is entirely correct; for, in my opinion, in some cases, Mercury, in some form or other, is indispensable, and must be used to remove the Venereal virus from the system; while in others, when the disease makes its first appearance in a simple Postule or Chancre, and proper attention is paid to cleanliness by washing the parts frequently with Castile Soap and Water, and applying the remedies hereafter mentioned, these Chancres will soon heal, and all tendencies to constitutional affections be entirely removed; at the same time, however, it will be necessary to attend to the peculiarities of the patient's constitution, and generally to give some internal remedy, so as to prevent absorption of the Venereal poison into the system.

The treatment, then, of Venereal disease resolves itself into two heads, viz.: the *Primary* and the *Constitutional*. The first is local, and means Chancres or sores on the privates, produced by the Venereal poison. The second means constitutional symptoms, produced by the absorption of the Venereal poison into the system. We shall first consider the local treatment of the various primary sores, and then the constitutional treatment. A Chancre is a sore with a thickened base, circumscribed inflammation, and want of disposition to heal. The parts most apt to be affected are, in men, the prepuce, head of the penis, and orifice of the urethra, and in the angle between the glands and body of the penis; and in women, about the labia or lips of the birth-place, nymphæ, and clitoris, but in some instances, they have extended as far up as the mouth of the womb.

Treatment.—Whatever may be the appearance of the primary Chancre or Sore, it is always advisable, when first noticed, to change the nature of the diseased action, which may be done by touching the Chancre lightly with Caustic, medically called *Nitrate of Silver*. Tie a bit of Caustic firmly in the end of a quill, wet the end of it with water, and apply it gently to the Chancre or Sore, once a day, or occasionally. The object is merely to destroy the surface which secretes the virus, then wet the sore with the Black Wash, viz.: Calomel, 20 grains; Lime Water, 2 ounces; mix, and shake well before you use it. You can always get this at a drug store by calling for the Black Wash. After cleansing or washing out the ulcer with this wash, sprinkle on it a little Calomel, or equal parts of Calomel and powdered Blood Root, then cover it with a bit of fine, dry lint, or bit of old muslin, and keep it in its place either by a convenient bandage, or bit of Sticking Plaster, or Black Salve. If the Caustic has been well applied for a few times, a scab will soon fall or slough off; after which the Caustic may be applied in the same way again, a second or third time, so as to be sure that the vitiated part is

entirely killed. Under this treatment a common Chancre will generally begin to heal in three or four days. Ply the Caustic once or twice a day; use freely the Black Wash; dress it as often with the Black or Healing Salve, first sprinkling a little Calomel in the ulcer. If there is much inflammation or swelling, apply at night an Elm Poultice. There will be but little difficulty in effecting a cure, so far as the external treatment is concerned.

The diet, in the mean time, should be light, and mainly vegetable — avoiding Pork, Fat or Salt Meats, Liquors, Tobacco, and remain as quiet as possible. The bowels should be, indeed must be, kept in a loose condition by the use of the proper kind of physic, and for this there is nothing better than the Blue Pill and Podophyllin, say 60 grains Blue Mass and 20 grains Podophyllin, mixed and made into twenty pills, and take one pill night and morning. When they begin to operate freely on the bowels, perhaps one pill a day will be enough. This is an excellent Anti-venereal Pill, and useful in both the primary and secondary stage of the disease.

Another excellent pill for the same purpose, and preferred by some because there is no Mercury in it, is as follows: Take 20 grains, each, of Podophyllin and Sanguinarian, made into pill mass with the Alcoholic Extract of Blue Flag Root; make twenty to thirty pills, and take one night and morning, or the same as the others. The May-apple Root (Podophyllum), in some form or other, is an important remedy in this disease — possessing, beyond doubt, very powerful anti-syphilitic properties. The same may be said of the Iris, or Blue Flag.

By early attention, then, to this disease, taking it in hand on the appearance of the first symptoms, and thoroughly pursuing the course here recommended, but a few days will be required to eradicate the virus, heal up the ulcers, and, in nine cases out of ten, the patient will escape all danger of the Secondary Form. In numerous instances that have been under my care, where the disorder was early attended to, and treated in this way, a cure was usually effected in a week or ten days — the patient being directed not to return too early to free living, venery, exposure, active exercise, and other indulgences, at least for the same time as was occupied in the cure.

Treatment of Bubo. — A Bubo is a kind of intermediate state between the Primary and Constitutional Form. It comes on with a pain in the groin, accompanied with some degree of hardness and swelling, which gradually increases until, at length, it becomes as large as an egg, which is attended with a pulsation and throbbing in the tumor, and great redness of the skin. No symptom is more difficult to manage than this. It occurs frequently in constitutions that are irritable and scrofulous, and greatly depends upon the peculiar temperament or habits of the person as to its speedy cure. Early attention is necessary to prevent its breaking or coming to a head; this can generally be done by the application of some Discutient Ointment. Perhaps the best for this purpose is the Mercurial Ointment; the Iodine Ointment is also very good; they can both be had at the drug stores already prepared. It should be applied two or three

times a day, and rubbed in well. It might be well to use both of these ointments — using the Mercurial one day and the Iodine the next, and so continue to alternate for several days, or until the swelling and soreness disappear. Some persons are so easily affected by Mercury that even the continued application of Mercurial Ointment for a few days will salivate them. Should any symptom of salivation appear, such as swelling and soreness of the salivary glands, a copperish taste in the month, soreness of the gums, and an increased flow of saliva or spittle, all of which are unmistakable symptoms of approaching salivation, both the Mercurial Ointment and the Blue Pill should be discontinued, if both are being used, until these symptoms subside; and in their stead the Iodine Ointment and other purgatives can be used. The bowels must be kept loose, and once or twice a week a brisk Cathartic should be given. But it sometimes happens, notwithstanding the means that you employ, the pain, swelling, disposition of the glands to suppurate, or come to a head, will occur. This will be known by sharp pains darting through the Bubo, and a pulsating feeling in it — for when these occur the suppurative process has generally commenced. If the Bubo will advance in spite of all your endeavors to prevent it, you must then assist the formation of pus or matter by the application of warm Poultices of Bread and Milk, or Slippery Elm Bark, Carrots, Linseed Meal, and the like, kept warm to the swelling, and secured by a proper bandage, so as to increase and assist the suppurative process as early as possible. When pus or matter is fully formed, the Bubo must be opened by a free incision of the lancet, kept perfectly cleansed with Castile Soap and Warm Water, and Poultices applied, the wound being afterward dressed as any other granulating sore. Complete rest is indispensable throughout every stage of this disease, and especially is it necessary in case of Bubo. The patient will be apt to plead the necessity of following his business, and the utter impossibility of staying at home. That is his affair; mine is only to protest against exercise, urge the importance of rest, and even the recumbent posture, which will deprive the disease of three-fourths of its terrors.

After the Bubo is once opened, in addition to cleansing it well once a day with warm Castile Soapsuds, it should be washed out and syringed well morning and evening, after using the Soap and Water, with a strong decoction made by boiling a handful each of Poke Root, Mayapple Root and Blue Flag Root. A table-spoonful of the same decoction taken twice a day, or sufficient to keep the bowels loose, is probably as good a remedy as can be taken internally, both as a purgative and as an alterative, to destroy the virus that may have been absorbed into the system and prevent the disease from becoming constitutional. If you use this freely, there will be no need of taking Blue Pill and running the risk of being salivated. At night poultice the Bubo with Elm Bark, if there is much inflammation; and during the day dress with the Black or Healing Salves.

Treatment for the Constitutional Form. — The most usual way in which a constitutional taint occurs is by absorption of the poisonous

matter from a Chancre or Bubo, hence the necessity of keeping these sores well cleansed from the start, and of applying such caustics and remedies as will most speedily and effectually destroy the virus and poisoned flesh. The Constitutional and Secondary Symptoms of this disease, as has already been stated, usually show themselves first in the throat and mouth, and on the skin. Syphilitic sore throat is very apt to occur to some extent in this disease, and is often mistaken for common sore throat. On looking into the back of the throat we see a dusky redness, and here and there circular or semi-circular patches covered with a whitish and very tenacious secretion; these patches often occupy the surface of each tonsil; they may remain indolent for a length of time, but sooner or later they ulcerate and form deep, irregular sores; in ordinary cases, the pain, inflammation and swelling are much less than that we find in common sore throat. As soon as these spots or ulcers appear they must be attended to, and not allowed to spread, nor the virus to be absorbed further, by being touched or burnt pretty thoroughly with Lunar Caustic (Nitrate of Silver) or Caustic Potash, and the throat and mouth well gargled and washed out several times a day with some proper gargle, such as I shall presently name.

When the skin becomes affected, which may be simultaneous with the ulcers in the throat, or soon after, and sometimes, though rarely, without any soreness of the throat, reddish and brownish spots appear here and there on the surface, and blotches of a copper color are dispersed over different parts of the body, on top of which there soon forms a thick scurf or scale, which falls off after a short time, then succeeded by another, which occurring several times, and at length being cast off, leaves a deep spot, in which an ulcer or sore is formed, which discharges a thin acrid matter. When the Venereal poison is secreted in the glands of the throat and mouth, the tongue will often be affected, so as to occasion a thickness of speech; the tonsils, palate or uvula will become ulcerated, so as to produce a soreness and difficulty in swallowing, and likewise a hoarseness of the voice. If the disease affects the eyes, obstinate inflammation will also attack these organs. The matter sometimes falls on deep-seated parts, such as the tendons, ligaments and periosteum, and occasions hard, painful swellings to arise, known by the name of Venereal Nodes. When this disease is permitted to go on, and is not counteracted by proper remedies, the patient will be affected with severe pains, particularly in the night-time. Hard swellings spring up upon the bones, which soften, ulcerate and waste away. The skull bones, in particular, are apt to ulcerate and exfoliate in large pieces. The shin bones and the bones of the arms are covered with Nodes, or hard, painful swellings, which are always most painful when warm in bed. The flesh wastes away; the hair falls off; the strength and appetite fail; the sleep is disturbed and unrefreshing; and in the end all the symptoms of Hectic Fever appear. In the worst forms of the disease, if allowed to run on, a universal rottenness pervades the flesh, skin and bones. Next to the Confluent Small-pox, it is the most filthy, loathsome disease in the whole catalogue of human maladies.

In the treatment of this disease, it is not always necessary to use Mercury internally. It may well be doubted whether it might not be best to dispense with it entirely, since the discovery of so many vegetable remedies, which seem so well calculated to fill its place as an Alterative and Anti-venereal. The external application of Mercury, as in the Ointment, Black Wash, and the like, has the advantage of producing the least disturbance, as it does not go into the stomach and circulation, and can produce no disturbance of them unless very long continued, or used in too great a quantity, when it may, by absorption, affect the general system, while it neutralizes or destroys the poison by coming in direct contact with it. Salivation by Mercury, once thought to be absolutely necessary in order to cure this disease, is not only not necessary, but always injurious and to be avoided.

Special Treatment.—If there are ulcers in the throat or mouth, touch them occasionally with Caustic, and gargle with a strong decoction of White Oak Bark, in which has been dissolved some Borax and Alum; or a decoction of Poke, Blue Fag and Mayapple Roots, with a table-spoonful of powdered Borax dissolved in each pint; gargle with this, and let the patient swallow a table-spoonful of it two or three times a day, without the Borax. If the skin is affected, it should be kept well cleansed, by first using Soap and Water, and then, once or twice a day, the Nitro-muriatic Acid Bath; that is, into about two quarts of warm water, put about a tea-spoonful each of Nitric and Muriatic Acid, and wash the whole surface with this. Occasionally use the warm Alkaline Bath, or Warm Water in which some Saleratus has been dissolved, or common Lye added.

Internally, some of the most powerful alteratives must be given, such as has been found specially valuable in this disease. The free use of the following articles, in the form of syrup or decoction, or several of them, will be found sufficient to cure any case of Secondary Syphilis, if persevered in, even without the use of any Mercury, viz.: Mayapple Root, Blue Flag Root, Poke Root, Burdock and Yellow Dock Roots, Sassafras, Sarsaparilla and Yellow Parilla Roots, Stillingia or Yaw Root, Bittersweet Root, Bitter Root, and last, though by no means of least value, the little, round, bulbous root of a little herb called technically *Corydalis Formosa*, and known by the common names of Turkey Corn and Squirrel Corn. It will not be necessary to use all of these articles, though all are good; a part of them, a majority perhaps, where they can be had, including always the Blue Flag, Poke, and Mayapple, and, if possible, the Stillingia, or if not that, then the common Yellow Parilla and Burdock should be used. Take a handful of each — less, however, of the Mayapple Root than any of the rest, as it is a powerful Cathartic — and boil slowly in water (rain water is the best) for several hours, until there are four pints of strong decoction; strain, and to each pint add half a pound of White Sugar; bring to the boiling point again to dissolve it, and when cold, add for each pint 1 dram of the Iodide of Potassa, first dissolving it in an ounce or two of water. This will be found a good Alterative Syrup. The dose will be two or three

table-spoonfuls twice or three times a day, and if it should act too freely on the bowels, reduce the quantity, so that it may produce not more than two operations a day. An excellent article for this disease, is the Compound Syrup of Stillingia, which can be procured at a Botanic drug store; if it does not contain the Iodide of Potassa, a dram to the pint should be added. The Sarsaparilla is also a valuable article, and often used with success, in the form of syrup, adding the Iodide of Potassa in the same proportion; but I would prefer always to use several of the articles above named along with it, in making the syrup. The Poke, Blue Flag and Mayapple Roots are almost or quite specifics in this disease. The Stillingia or Yaw Root is also regarded as a specific, especially in the Southern States, among the negroes. If you use all the articles I have named, together, including the Spanish or foreign Sarsaparilla, it will be, perhaps, all the better. A pound of the dry roots, altogether, is enough for a quart to three pints of the strongest kind of syrup. Should you not use the May-apple Root in the syrup, it will then be necessary to keep the bowels open with some good Cathartic Pills, such as the following: Podophyllin, Scammony, and Gamboge, each 30 grains; make into thirty pills, with extract of either Bitter Root, Dandelion, or Poke Root, and take three pills two or three times a week. If you use Mercury at all in this form of the disease, the best preparation is the Iodide of Mercury, 30 grains of it made into thirty pills with a little Extract of Conium Maculatum, or of Hyoscyamus — one pill to be taken once a day — using the syrup at the same time, as before directed, and keeping the bowels open with the proper purgatives. It may require weeks, and even months, to effect a cure; but this course is to be pursued faithfully and thoroughly, throughout, which can hardly fail to succeed eventually. The diet must be mild, unstimulating, and mainly vegetable. Should the bones become affected, as with nodes, swellings, pains, and the like, and especially if much Mercury has been taken, the patient should take twice a day 5 or 6 drops of Nitric Acid in half a tumbler of water, or just enough to make the quantity of water pleasantly acid, like Lemonade. It is a powerful Anti-syphilitic and Anti-mercurial remedy, and is often valuable when the disease is of long standing. A strong solution of Sulphate of Copper is highly recommended by some as a wash for Sores in the throat, as well as for Chancres: to be made by adding 30 grains or an even tea-spoonful, powdered, to an ounce or two of Water, in a vial; wash the throat and mouth with this by means of a swab or feather, two or three times a day. For nodes and swellings of the bones, rub them every night with Mercurial Ointment, or a Liniment composed of equal parts of Chloroform, Spirits of Hartshorn, Tincture of Camphor and Laudanum.

GONORRHEA.

THIS disease, more commonly known by the vulgar name of Clap, is simply an inflammation of the mucous or lining membrane of the urethra, or inner surface of the penis in the male, and of the vagina in the female. The person first experiences a slight degree of heat and itching in the urinary passage, and a feeling of scalding in the discharge of water; the edges of the opening swell, become red, and immediately after the discharge is observed a thin whitish or pale-yellow matter, which gradually increases in quantity, and becomes thick and of a deeper yellow. It sometimes presents a greenish and even a bloody appearance, depending on the greater or less severity of the attack. You are enabled, therefore, from the color and appearance of the matter, to judge of the degree of inflammation present. The neck of the bladder becomes irritable, producing a constant desire to make water. The foreskin of the penis will become so swelled, in some instances, as to prevent its retraction over the glands, and, in other instances, being retracted, it remains tight around them — the one called *Phymosis;* the other, *Paraphymosis.* When proper attention is not paid to cleanliness, the end of the penis is very irritable; inflammation is apt to be severe; the under surface of the urinary passage becomes hard and feels like a cord; the penis is also frequently stiffened throughout the whole extent, and turned down, producing what is called *Chordee*, from the irregular contraction which occasions a curvature of its under part or side. This symptom is most frequently at night, when excited by the heat of the bed. In ordinary cases of Gonorrhea, the peculiar inflammation of the urethra, which constitutes the disease, does not extend up the passage beyond two inches from its orifice; in slight cases, there will be only a slight heat and scalding in the discharge of water, and some little narrowness of the passage. If proper care and attention are paid to the disease, it will get well in the course of a week or ten days; but where it is neglected, it will continue for many months, and even years, producing Gleet, Strictures, Disease of the Kidneys, and accompanied by a general uneasiness in the loins, testicles, and bladder, which often affect the whole of the lower belly or pelvic region.

In women the disease is generally more mild, and not so apt to irritate the bladder, or to produce inflammation. The pain is commonly slight, and soon disappears, the scalding more frequently absent, and the running soon terminates in a discharge of matter, which bears a close resemblance to the Whites, or *Fluor Albus.*

No certain time can be fixed upon for Gonorrhea to make its appearance after the infection has been received. In some cases the poison will lie dormant two or three weeks; but, in general, the disease will show itself in from four to seven days, and has been known to come on in twenty-four to forty-eight hours. This disease has no connection with that of Syphilis, and is but a simple, local, but peculiar inflammatory affection, communicated always by infection or actual contact with the specific virus, and affects no part of the system but the genital organs, and does not become constitutional, but often chronic. The disease admits of a certain and speedy cure, in ordinary constitutions, if properly attended to, or commencing in the early stages of the disease. In a great many cases, however, it is frequently rendered tedious and very painful, by a desire to conceal the malady, drinking spirituous or fermented liquors, improper diet, want of cleanliness, and sexual intercourse. If properly attended to, a cure may be effected in a week or ten days, or probably earlier; but when it is neglected, it will continue for many months. Another risk arising from a long continuance of the disease, is the taking place of Stricture, which may be known by difficulty and pain in making water; and, instead of being discharged in a free and uninterrupted stream, it splits in two, or is voided drop by drop. From neglect it assumes a most serious and dangerous nature, as it not unfrequently blocks up the urethra, or passage where the urine flows, and often a total suppression is the consequence. Warts on the glands or end of the penis sometimes appear. They should be nipped off with scissors, and their roots touched with Caustic. This is by far the best way of treating them. Sometimes their renewed growth is prevented by touching them with strong Acetic Acid. Gonorrhea is often attended by considerable inflammation, extending to the glands in the groin, or to the testicles, which become swollen and extremely painful to the touch. In such cases of swelled testicle, bathe well in Warm Water, three or four times a day, and wear a suspension bag, which can be purchased at any drug store.

Treatment. — A radical cure of this disease may be effected in three days, if taken at the commencement, or in the early stage, by the following means: In case of a male, go to the drug store and get 20 grains of Nitrate of Silver, put into a vial, and add 1 ounce of Water; get also what is called a P. P. Syringe, either of glass or metal, and when the Caustic is dissolved, inject about two teaspoonfuls of the liquid up the penis, and retain it there half a minute or so, by holding the end of the penis shut, and then let it pass out; do this two or three times during the day. At the same time, or before, take a brisk, cooling, Hydragogue Cathartic, such as 3 or 4 grains of Podophyllin, accompanied with 1 heaping tea-spoonful of

Cream of Tartar, or a large dose of Salts. Then make a strong decoction of Green Tea, about 1 ounce simmered in 1 pint of water; strain, and add 60 grains, each, of Sugar of Lead and Sulphate of Zinc. On the second and third days, and afterward if necessary, use of this three times a day for an injection, in the same way that the Nitrate of Silver solution was used. At the same time procure an ounce or two of pulverized Cubebs, and, after the physic has operated, take them in even table-spoonful doses, three times a day, mixed in a little Water or Lemonade. Nothing else will be necessary — only rest, mild diet, and refraining from all stimulating liquors and sexual intercourse. For females, the same course to be pursued, except that the Nitrate of Silver solution need not be used — making use of the other injection from the start.

If pills are preferred to the powdered Cubebs, take about ½ ounce of Balsam Copaiva, thicken with Magnesia, and make into ordinary sized pills, and take five or six three times a day. Or, take Balsam Copaiva, 1 ounce; Sweet Spirits of Niter, 1 ounce; Oil Turpentine, ½ ounce; Oil Cubebs, ½ ounce; mix; to be taken in tea-spoonful doses, four times a day, shaking well at the time. If there is any pain or Chordee at night, take thirty or forty drops of Laudanum at bed-time. Should the penis swell or become inflamed, poultice at night, or apply cloths wet with cold water.

Should the disease become chronic, or be of long standing, the injection of Nitrate of Silver is not to be used, as that is only applicable in the commencement or early stage of the complaint. But other injections should be used, such as the infusion of common Green Tea, with about 5 or 6 grains, each, of the Sugar of Lead and Sulphate of Zinc to each ounce of the infusion; or the Lead and Zinc dissolved in that much Rain Water, Camphor Water, or Rose Water, is a very good injection, and may be used by either male or female. At the same time one of the following preparations should be taken. Solidified Balsam Copaiva, 1 dram; Venice Turpentine, 30 grains; Podophyllin, 10 grains; mix, rub well together in a small glass or wedgewood mortar, work in as much pulverized Rhubarb as you can, and make into 30 pills; take two or three pills, twice a day, until they operate thoroughly on the bowels, then one pill twice a day. Or, Balsam Copaiva, 2 ounces; Sweet Spirits Niter, 2 ounces; Oil of Sweet Almonds, 1 ounce; Spirits of Turpentine, 1 ounce; Compound Spirits of Lavender, ½ ounce; Laudanum, ½ ounce; mix, and take a tea-spoonful or two three or four times a day, and drink freely of Flax-seed Tea, or infusion of Mullen Leaves and Horsemint.

The following is known as the great French remedy for Gonorrhea, in any stage of the disease, and said to be infallible without any other medicine: Take ¼ ounce, each, of Dragon's Blood (to be found at the drug stores), pulverized Colocynth, and pulverized Gamboge; pulverize and rub these three articles together in a mortar; then add ½ pint of Boiling Water (Rain or Soft Water preferred), and stir occasionally for an hour with the pestle; then add 2 ounces, each, of Sweet Spirits Niter and Balsam Copaiva, and stir again till well mixed; then bottle for use. Dose: two tea-spoonfuls, night and

morning, until it operates thoroughly on the bowels; then one teaspoonful two or three times a day, or sufficient to keep up a gentle action on the bowels, and continue until a cure is effected.

The following is also an excellent remedy: Take Balsam Copaiva and Spirits of Turpentine, each, ½ ounce; Sweet Spirits Niter, 1 ounce; Oil Cubebs, 2 drams, well cut in ½ ounce of Alcohol; Tincture Opium, 2 drams; mix all together; take in tea-spoonful doses, three or four times a day, and keep the bowels open by the use of Podophyllin Pills or Salts.

For Gleet, which is a slight running after the inflammatory symptoms have all subsided (a sort of sequence that often follows Chronic Gonorrhea), accompanied generally with pain and weakness in the back, etc., take the following: White or Venice Turpentine thickened and made into pills with pulverized Rhubarb, as much as can be worked in; take two pills twice a day.

Balsam Copaiva is now got up in elegant form, called *Capsules*, which entirely conceal the unpleasant taste. A box may be obtained at any drug store for twenty-five cents. It is a good remedy, which may be used when the other forms disagree with the stomach, and is suitable for any stage of the disease. Directions for using them will be found with each box.

ATROPHY—EMACIATION.

ATROPHY OR EMACIATION, called also, *Marasmus*, is a gradual wasting away of the body or flesh, unattended by any marked symptoms or disturbance other than impaired appetite, diminution of strength, lassitude of body and mind, and a pale, languid, and sometimes bloated countenance. There are seldom any Febrile symptoms, Cough, difficulty of Breathing, Diarrhea, Expectoration, or other discharge. The abdomen is sometimes swollen, and also the lower extremities, showing a Dropsical tendency, the bowels either costive or inactive, the urine copious and of a turbid color, the breath fetid or offensive, and the patient complains of great lassitude or weakness after a little exertion. This weakness or lassitude increases with the emaciation or wasting of the flesh. After the disease has continued for some time, there may be alternations of flushed face; a dry, hot skin at times; wakefulness or disturbed sleep; a fretful disposition, with a quick, hard, or wiry pulse. Very often, too, in children, there will be symptoms of Worms, as rubbing the nose, swelling of the upper lip, involuntary startings and grinding of the teeth during sleep, and other symptoms common in children troubled with worms.

Emaciation, or Marasmus, is a disease or diseased condition which

generally attacks children and young persons, though it frequently affects persons of mature age. It is often difficult to tell what is the cause of the complaint, and quite as difficult to cure it. It prevails most extensively in cities, crowded localities, and among children and young people of factories, crowded schools, and places where there is evidently a lack of pure air. No doubt confinement in crowded places, and a lack of pure air and of out-door exercise, are often the starting or primary cause of the disease. But what is the particular derangement in the system, or what the department of the human machine, which is the immediate cause, or through the diseased or defective working of which it results, is more difficult to determine. It may result from a derangement of the system, caused by some copious or long-continued discharge or evacuation, as from long-continued Diarrhea, from Hemorrhage, from Leucorrhea, or it may result directly from Consumption or Disease of the Lungs; also, from starvation or lack of food, and from impure or corrupted nutriment, and, as already intimated, from foul air. It may, and often does, result from Dyspepsia or defective Digestion.

Unquestionably the immediate and direct cause of Emaciation or Atrophy is a derangement or diseased condition of some part of the delicate machinery of nutrition. It may be in the stomach, the bowels, the mesentery glands, the lymphatics, or the absorbents. Most likely, I think, the lacteal or mesentery glands are the organs most directly implicated. Especially is this the case in children; at least it has often been found to be so; and if the cause in children, why not in grown persons? The lacteals are a set of small but numerous glands, situated in the mesentery and connected with the bowels, whose office or function it is to extract the nutriment or chyle from the contents of the bowels and convey it to the thoracic duct, to be, by that, carried into the blood, and thence distributed to all parts of the body.

Treatment. — It may safely be inferred that in all cases of Emaciation, where you do not know some other positive cause, as Starvation, Bad Food, or Consumption, that some portion of the glandular or secretory system is out of order; hence, an alterative or constitutional treatment is required. In children, where evidently the mesentery glands are diseased or defective, Cod-liver Oil has been found one of the most effective and beneficial remedies; and it may be used in all cases with reasonable expectation of benefit. The dose for infants and small children is from a half to a tea-spoonful three or four times a day, in a little breast or other milk. For youths and adults, a table-spoonful three or four times a day. If the abdomen is swollen and sore, as is nearly always the case when the mesentery glands are the seat of the difficulty, a little of the same Oil should be rubbed on it

once or twice a day, especially in cases of children, and if a bit of oiled silk were laid over it, confined with a bandage, it would be an improvement. In addition to this an Alterative Syrup should be prepared, such as is recommended for Scrofulous Diseases and Impurities of the Blood. (See "Alterative" and "Scrofulous Syrup.") If you can not get all the articles used in making the Alterative Syrup, as recommended in the recipe, get what you can. A very excellent Alterative and Tonic or Restorative Syrup may be made as follows: Take Burdock and Yellow-dock Roots, a double handful of each; Yellow Parilla Root, a handful; Dogwood Bark and Poplar Bark, each a handful (inner bark); a handful each of Elder Root and of Ironweed Root; and if the lungs are at all affected, add a handful of Spikenard Root, and as much Hoarhound Herb; a little Sassafras Root may be added to give a good flavor; boil in about 2 gallons of water, slowly, down to about 2 quarts; strain and add 4 pounds of Sugar; simmer slowly, to melt the Sugar and form a syrup. Dose, for a grown person, about two table-spoonfuls three times a day; younger persons less in proportion. The above is about the proportions for making half a gallon of the syrup; a less quantity can be made at a time, using the same proportions. It is both alterative and tonic, or strengthening, and will be found an excellent preparation in all cases of Emaciation, Marasmus, or Atrophy of the Body

Proper attention must also be paid to the skin. A frequent warm Sponge Bath, the Water strongly saturated with Salt, should be employed at night, rubbing the surface well afterward with the hands or a dry towel; a Cold Bath or Shower Bath in the morning, on rising, once or twice a week, rubbing the surface well. By all means, let the invalid take plenty of exercise in the open air; live on a nourishing, generous, and easily-digested diet; using a good proportion of meat, such as Beef, Mutton, and Wild Game.

The bowels must also be attended to. Some Laxative Pills that will also act on the liver and glandular system, should be taken regularly. The common Liver Pills will be good, taking one pill a day. Or the following: Take finely powdered Mayapple Root, Blood Root, and Golden Seal Root, equal parts, and make into ordinary sized pills, with a little Extract of Dandelion, and take one pill every night on going to bed. A little Capsicum might be added, about ½ grain to a pill, to prevent griping, and to stimulate the digestive organs; if the skin is disposed to be dry and inactive, ¼ grain each of Ipecac and pulverized Lobelia Seed to each pill, would be a good addition. Then you will have a pill that will act gently on the bowels as a Cathartic, on the liver and glandular system as an Alterative, and also on the skin as a Sudorific, while it also promotes Digestion. Three or four of these pills if given at one dose, will act as a brisk and very excellent and safe purgative. If one pill a day should keep the bowels too loose, give them less frequently—one every other night. For children, the same articles (omitting the Capsicum) can be made into a syrup and given in small doses. Rely on Alteratives, Tonics, Nourishing Diet, Salt Baths, and plenty of exercise in the open air.

OBESITY—EXCESSIVE FAT.

OBESITY is a condition of the physical system directly the opposite of that last noticed — Emaciation or Atrophy. It is an accumulation of too much fat. A certain amount of fat, as a constituent element of the body, is necessary to health as well as desirable for appearance; but its accumulation may become so great as to amount to disease, and may become an impediment to the performance of the duties of life, as well as a cause of its shortened duration.

Obesity usually commences in young persons, generally about the time of puberty. It seldom attacks persons, or commences in them, after they have arrived at mature age, say twenty-one or twenty-five, except it be in quite old persons, and then seldom to the extent of causing any very serious inconvenience. Sometimes it begins in quite young persons, and even in infancy; though its most usual time to make its first appearance is between the ages of twelve and sixteen. The later the disease commences in life, the more controllable it is by treatment and management.

Treatment.—The first thing indicated in the treatment is to cut off the supply, the material, as far as possible, which produces or furnishes the fat. Fat is a principle, or rather a compound of three principles (Stearine, Margarine, and Oleine); and it requires fat to produce fat. If, therefore, you wish to counteract the tendency to Obesity, to prevent or decrease it, you must rigorously interdict from the person's diet all articles of fat, oil, butter, and the like, and every thing, as far as possible, which contains one or more of the constituent elements of fat. Of course, it is impossible to exclude every thing which is capable of making fat, as there are no articles of food which do not contain some portion of oleaginous matter, and almost all are capable of transformation into fat, or of producing more or less of that article. Let all Fat, Oil, and Grease be excluded from the diet. That will be that much gained.

The next thing of importance is that the mass of food lie in the stomach as short a time as possible, consistent with health and the utility of the food, so that a fatty fermentation may not be set up in it. Rapid digestion should be promoted. To this end the time for meals should be fixed for an early hour in the day, before exertion has rendered the power of the organs of nutrition languid and weak. Breakfast should be light, a little Toast and Tea or Coffee, and if much active exercise or labor is intended, a little Lean Meat. Let the dinner be from twelve to one o'clock, not later than two, and consist of Stale Bread, and Meat without any fat about it, plain boiled Macaroni, or Biscuit or Cracker Pudding. No liquids of any kind. Liquids retard digestion. Hence no drinks of any kind, not even water, should be taken at dinner, nor for half an hour or an hour after. The person should eat enough at dinner to do him for

the day; no "second dinner" or supper should be taken. A little Cracker and Water, or Toast and Tea may be taken in the evening, or a cup of Gruel or Roasted Apple before going to bed, but no regular meal. The smallest amount of food consistent with the patient's health can only be found and fixed by experiment; which should be ascertained, and that amount only used.

In cases where the fat is largely accumulated in the abdomen, it will be well for the patient to wear a stout bandage, properly adjusted, so as to support the muscles of the abdomen, which may be tightened gradually. The support thus given to the abdominal muscles, relieves the dragging sensation in the loins and back, which many persons experience and suffer from with large abdominal viscera, increased by Obesity. It will also tend to afford assistance to the absorption of the fat.

As to medical treatment, perhaps the most important is the use of Alkalies. Some persons are in the habit of using large quantities of Vinegar and other Vegetable Acids. There is a common idea among the people that Vinegar is an antidote to Fatness or Obesity. This is a mistake. It may sometimes, in fact does, have that tendency, but it is more by injuring or destroying digestion than from any special or specific counteracting of the tendency to fatness. Alkalies, on the contrary, tend to change fat and oily matter into soap, which is rather healthy than otherwise. It converts the excess of fat in the stomach and bowels, or a portion of it, into soap, which passes off with the excrement. Hence the use of some proper Alkali is advisable. A very good preparation for this purpose, which can generally be had at any drug store, is Liquor Potassa. It is made of Sub-carbonate of Potash, and Lime, and Water. The dose would be, to commence with, about half a tea-spoonful, in a little Water or Milk, three times a day, gradually increased to a tea-spoonful, and finally to about two tea-spoonfuls. It should be taken about an hour after eating. If you can not get the Liquor Potassa, use weak Lye, Carbonate of Soda, Saleratus, and the like. Endeavor to turn your stomach into a sort of soap factory on a small scale, and thus convert the excess of fat, before it has time to pass into the system, into soap, and let it pass off from the bowels, as other refuse and useless matter.

As to exercise, if the person is young and vigorous, and his Obesity does not prevent the use of his legs, the best thing he can do is to walk as long and as much as he can every day. The greater number of hours that can be devoted to this exercise every day, the quicker and greater will be the diminution of the bulk of the body. Riding on horseback — the rougher going the better — is also good exercise for a person in this condition. All kinds of out-door exercise may be regarded as conducive to the object sought to be accomplished — the reduction of the Fat, and the overcoming of the tendency to Obesity.

The bowels must not be suffered to become or remain costive. After the ordinary nutriment has been extracted from the food by digestion, the sooner the remainder of the mass moves off from the

stomach and bowels the better. The bowels, therefore, should be kept rather loose all the time. It is best, where it can be done, to secure this result without physic; but where necessary, Cathartic medicine must be resorted to. There is no danger of physicking too much, in this complaint. The Neutralizing Cordial or Powders, as they contain a portion of Saleratus, will be good; though not so good as the ordinary Cathartic Pills, or Mandrake Pills, on account of the Rhubarb in the Neutralizing Mixture, which, though cathartic, is also, as a secondary effect, astringent. The Podophyllin or Mandrake Pills, made with Extract of Dandelion, will be about the best, as a cathartic and laxative. One pill a day, or every two or three days, may be sufficient, supposing there is a grain to a grain and a half of Podophyllin to a pill. In conclusion, I would say, as the substance of the whole matter: Limit the diet to the lowest amount possible to live on, excluding all fatty, oily, and improper articles; keep the bowels open; use freely and steadily of alkalies, and take plenty of exercise.

DANGER FROM HYPODERMIC INJECTIONS.

IN these later days it is very common for physicians to relieve severe pain by giving Hypodermic injections. Of this process Prof. Lionel S. Beale, of King's College, London, has this to say:—

"People are nowadays too apt to get into the way of prescribing sedatives for themselves after they have found relief, and thus they may do themselves great harm. Therefore, always exercise caution in prescribing and recommending Morphia, or others of this class of remedies, and be careful to tell patients they ought never to prescribe them for themselves. More particularly as regards Hypodermic injection it is my duty to impress upon you the importance of not allowing the patient, under any circumstances, to get into the way of operating upon himself. There is really great danger in this, for the process is very simple and easily performed; and, as the relief is great, patients are very apt to assist themselves without waiting for the doctor. Of those who take this injudicious course, not a few get into the habit of narcotizing themselves on the slightest excuse. Whenever they suffer slight pain they at once resort to Hypodermic injection. As soon as the effects begin to wear off the pain recurs and the dose is repeated. A vicious habit is soon acquired, and it is difficult, indeed, to prevent many of those foolish persons from going to extremes and making themselves slaves of the remedy. Very painful cases of the kind come under my notice from time to time, and every now and then death results from an overdose. Patients who have contracted this habit of self-injection not uncommonly lose all control over themselves, and introduce narcotics hypodermically, just as other weak-minded individuals become a prey to drink or indulge in other vices. We shall, before long, have societies for the entire suppression of Hypodermic injection, if this treatment becomes much more fashionable than it is."

FOURTH DIVISION.

INFLUENCE OF NOXIOUS SUBSTANCES AND POISONING.

THE INFLUENCE OF TOBACCO.

THE habits of smoking, chewing, and snuffing Tobacco have become so universally prevalent, and their effects on the body and mind so obviously injurious, that we feel it to be a duty to do all in our power to speedily remove this barrier to physical reform and improvement. Indeed, we regard the use of these narcotics as dangerous and greatly destructive to the constitution. Is it not a fact that consumers transmit to their offspring a perverted appetite, which becomes more and more intense? Are not the physical sins of parents visited on their children? Can an EVIL tree bring forth GOOD fruit? Are not many of the ills, and much of the disease by which we are afflicted, the result of using Tobacco?

Tobacco is well known to be a powerful Vegetable Poison; a few drops of the Essential Oil will extinguish life in man, and many animals; if taken in the stomach in substance, a very small portion of the leaf is sufficient to bring on nausea and vomiting, accompanied with great weakness, and a cold, death-like sweat. Many persons have actually been killed by an incautious employment of it for medicinal purposes. When taken into the nostrils in the form of Snuff, a portion of it enters into the sonorous cavities of the face, and gradually impairs the functions of the voice. I have frequently known snuff-takers to lose the power of public speaking in an audible manner. Snuff, from its constant use, has been found to produce abscesses in the tender internal surface of the nose; for, from the infinite number of nerves diffused over the mucous membrane of the nose, it is endowed with exquisite feeling, and the better to preserve the sense of smelling, those nerves are continually lubricated with moisture.

By the almost caustic acrimony of Snuff, this moisture is dried up, and those fine, delicate nerves, the organs of smelling, are rendered useless and almost insensible. To this self-evident bad effect may be added the narcotic, or stupefying power of Tobacco, in any form, by which not only the brain and nerves are injured, but also the eyes. A snuffer can be easily known by a certain nasal twang, or an asthmatic wheezing, or disagreeable noise in respiration or breathing, which resembles snoring. Snuff, also, frequently causes excrescences in the nose, which often end in Polypi, and not unfrequently those predisposed to Scrofula, Ulcers, or Cancers, may bring them on by this practice. The drain of the juices by Tobacco has a tendency to injure the muscles of the face, to render them flaccid, to furrow and corrugate the skin, and to give a gaunt, dry, withered, and jaundiced appearance to the human face. The Oil of Tobacco is a mortal poison when applied to the open vessels of a wound. Surely this plant, when taken in substance as Snuff, must not be injurious to the head alone, for it is often carried down to the stomach. I have known many cases where the appetite has been almost destroyed, and Consumption brought on, by the immoderate use of this powder. We were well acquainted with a distinguished gentleman, occupying a high station in society, who was ever complaining of coldness and distress in his head, to find relief from which he took a variety of medicines, who could not be convinced that his difficulties were occasioned altogether by the use of Snuff. He, however, continued the practice, and fell a victim to this infatuation. The least evil which you can expect it to produce, is to emaciate the body, enfeeble the memory, and destroy the delicate sense of smelling. There are many ladies who would feel disgraced to be seen with a Cigar or quid of Tobacco in their mouth, who daily, and almost hourly, use Snuff as a tooth-powder. After a prolonged excitation by this noxious and poisonous agent, the nervous system becomes impaired, the breathing suppressed, a paralytic state of the muscles takes place, and not unfrequently the most fatal consequences result from this poisonous and most powerful stimulant.

Tobacco, so much used in various ways, has the most deleterious effects on the system. Although one of the most virulent poisons in nature, such is the fascinating influence of this noxious weed, that mankind resorts to it in every mode that can be devised to insure its stupefying and pernicious agency. The severe and dyspeptic symptoms, and diseases of the Liver, Lungs, Stomach, and Nervous System are produced in inveterate Snuff-takers, Chewers, and Smokers, from the effects of the Oxalic Acid. Very many repent sincerely that they have ever indulged in this slow, but sure, poison, which, in

many constitutions, leads to such fatal consequences; and could we draw back the covering of the tomb, and know what Tobacco has done in shortening human life, it would surprise us that man, the image of his Maker, endowed with reason, should have consented thus to destroy himself both mentally and physically.

By chewing Tobacco, all of its deadly powers are speedily manifested in the commencement of the practice; its nauseous taste and stimulant property excite and keep up a profuse discharge from the salivary glands. The great increase of this discharge before and after eating, and the large quantities swallowed about that time, is unequivocal evidence of its importance to the digestive organs. What, then, must be the state of that man's digestion, who, until seated at table, keeps his quid in his mouth, and immediately returns it thither after rising from his meal? When we reflect that large quantities of saliva, strongly impregnated with this poison, and even particles of the substance itself are frequently swallowed, what, again I ask, is the probable condition of such a person's digestive organs? When such persons are affected with Dyspepsia, or other diseases, particularly of the nervous system, they never think of abandoning their Tobacco as the cause, but after suffering a while, place themselves under a physician's care, and pour into their stomachs a quantity of medicine, and raise nature to its wonted tone, only to be again destroyed by the use of Tobacco. The disastrous influence of Tobacco upon the mind is no less fearful than upon the body. No pen or tongue can describe the intellectual ruin occasioned by it. If angels ever weep over self-inflicted tortures, they have mingled their tears over the unspeakable wretchedness of the Tobacco consumer. The mental misery occasioned by the use of spirituous liquors, I have before described, and no one doubts that, like the devil, it tortures its worshippers. But if the Tobacco inebriate should tell his tale of mental wretchedness, it would excite the feeling heart. Liquor and Tobacco go hand in hand in the work of destruction.

The most fashionable mode of using this noxious weed, is Smoking, which is as poisonous as Chewing, if not more so, particularly to those of delicate and nervous temperaments; the smoke penetrates the innumerable air-cells of the lungs, which it heats and irritates, and, being absorbed from them into the blood, causes Headache, Weakness of the Nerves, Soreness of the Eyes, Restlessness, Palpitation of the Heart, and occasionally produces the Cancer of the Lip, so frequently a subject of surgical operation, and sometimes terminating in derangement. The tone of the stomach is impaired, and indigestion, with its train of evils, is the consequence. In many persons the nervous system is so affected that the individual becomes tremulous

feeble, emaciated, and sallow, and the result is a diseased state of the Liver. Few articles more powerfully affect the nervous system; it impairs the memory of those who use it, weakens all their intellectual powers, and sends down its influence to posterity, so that the children of those who use it to excess are liable to insanity, and a variety of nervous diseases which may be conferred on them. What a great degree of darkness still rests on the whole community, in relation to the influence of disease conferred upon our children, both mentally and physically!

With what propriety may we apply to this subject the language which is often used in reference to Spirituous Liquors? What organ in the human body needs these Narcotic Poisons in order to perform its functions in a more perfect manner? *There is not one!* God has made none; nor is there an organ whose healthy action is not disturbed by the use of Tobacco, and which it does not instinctively reject. To every organ it touches, Tobacco is poison.

BACTERIA IN THE INTESTINES.

EVERY mouthful of water consumed by sheep, oxen, and other animals, teems with myriads of low vegetable and animal organisms in various stages of existence; and in the food they take, fungi in various stages are present, as well as the sporules of many different species. These low organisms are, therefore, always passing into the bodies of the animals in countless multitudes. But although millions of living fungi are always entering the alimentary canal of man and animals without doing harm, and probably without growing and multiplying there to any great extent, there are circumstances under which a different state of things is observed. If the stomach is out of order, if the bile and other secretions are deranged, or from some temporary or permanent impediment to their escape are not poured into the alimentary canal in proper quantity, phenomena totally unlike those characteristic of the healthy state are induced. Many an infant has suffered from the extraordinary development of bacteria in its alimentary canal, and some children die from the state of things thereby induced. But the bacteria cannot correctly be regarded as the cause of the departure from the normal state. That is to be sought in the secretions and in the action of the glands prior to the multiplication of the organisms.

I have seen every part of the cavity of the stomach, and the small and large intestine of an infant filled with curdled milk which had not undergone the slightest digestion, and every particle of which, when under the microscope, seemed to be almost composed of bacteria, so abundant were these bodies. Sometimes, however, bacteria grow and multiply in the milk of the mother before it has escaped

from the breast, and the changes effected in the milk by the growth and multiplication of the organisms, it need scarcely be said, render it quite unfit for the sustenance of the infant; and such milk, were it taken, would, except perhaps in the very strongest children, give rise to serious derangement of the digestive organs. In such a case the maternal secretion must have been out of order at the time of its secretion, or the bacteria would not have grown and multiplied in it. It is certain that in such secretions, and in the glands that produce them, bacteria-germs are always present, but do not increase and multiply until long after the secretion has been discharged from the gland.

In face of such facts, it is difficult to accept the doctrine that bacteria, fungi, and such like low organisms are morbific, or disease-producing agents, or are of themselves productive of harm to the organism into which they pass. It is astonishing that, notwithstanding these facts, which can be verified by any one—facts with which many of us have been familiar for years, should at this time be unknown to, or somehow escape the cognizance of, some who have been recently studying the life-history of these very organisms. The knowledge of such broad general facts renders it difficult, I think, to accept off-hand the doctrine that such organisms are somehow intimately connected with the origin and communication of many of the most serious diseases of man and animals.

There is, probably, not a part of the body of any one of us of a quarter of an inch in diameter where bacteria-germs are not present. Certainly every time we eat, myriads are carried into our alimentary canal; and every time we breathe, except in the very purest atmosphere, multitudes pass into the air-passages. So small are these bacterial germs, that they would pass without the slightest difficulty through basement membrane and through the interstices of any of the tissues of the organism; and yet the public is taught that there is some intimate connection between bacteria, and dust, and morbid phenomena. The dust which causes disease is of a most exceptional kind. It has been said that the air of the Swiss mountains is devoid of bacteria. But is the health and vigor of the inhabitants of the Alps to be compared with that of the workers on the Paddington Dust Heaps? As a fact, ordinary bacteria are harmless enough; they exist in us without disturbing us in any way, but they only grow and multiply in great numbers when circumstances become favorable. I can give you positive proof that bacteria-germs exist not only upon the surface of the skin and mucous membranes, but in the internal organs, in the interstices of healthly tissues, and in the blood itself. . . . The conclusion, therefore, in accordance with the facts of the case and with common sense, is that which I have before adverted to, viz., that bacteria-germs exist at all times in all parts of the body, even in the blood itself during the healthy state.

I conclude that as long as the normal state of things exists, the living bacteria-germs in all parts of the organism do not grow and multiply, but that when any change occurs of the character of that which results in chemical decomposition, these bacteria-germs multi-

ply. This multiplication proceeds, although we are alive, just as it takes place in dead animal and vegetable matter. And it will occur in every part of every one of us a very few hours after death.

So that you see if bacteria-germs constitute the actual, material, living particles by which contagious disease is propagated, they must be peculiar bacteria, totally different from the ordinary bacteria-germs which exist, and have existed everywhere. The ordinary bacteria may certainly grow and multiply enormously on the mucous membranes of the body, in follicles of the mucous surfaces, and in viscera, —intestinal canal, bladder, and passages therefrom, nay, even amongst the elements of healthy growing tissue, without causing any disease at all. Bacteria-germs, low fungi, and low algæ exist in connection with the tissues and fluids of every human organism, and, as you may convince yourselves at any time, millions of these are unquestionably present during every moment of existence in health on the surface of the dorsum of the tongue. Multitudes, as I have said, pass down the alimentary canal every time we swallow food or fluid. Such ordinary bacteria and their germs do us no harm whatever. But please do not infer from what I have said that putrid fluids loaded with bacteria are innocuous or to be recommended.—*Prof. Beale.*

DELIRIUM TREMENS—MANIA A POTU.

DELIRIUM TREMENS is a peculiar disease, or condition — the result, usually, of excessive, continued intoxication, or inebriation from the use of Alcoholic liquors. It consists in a peculiar exhausted condition of the nervous system, accompanied with more or less mental disorder of a peculiar kind. Every thing about the disease is of a peculiar character, common to no other complaint. Hence, it may be easily distinguished from other diseases. It is readily enough known, however, when it appears, from or by the *cause* which produces it. True, it may be induced by the habitual and long-continued use of Opium, and perhaps by other means; but when we speak of Delirium Tremens, every body understands that peculiar and dreadful disease and ruin of the human constitution, body, and mind, caused by the continued, intemperate use of intoxicating liquors. The disease may not, and frequently does not, develop or show itself while the person continues the regular, daily use of the alcoholic beverage, but immediately on his discontinuing it, the artificial stimulant being withheld, the wreck and ruin of the nervous system is such that it gives way, and the unfortunate subject lapses into the most horrid condition of suffering imaginable, both of body and mind.

The first symptoms of Delirium Tremens is a state of restless, nervous irritation, trembling of the hands, restlessness or sleeplessness at night; or if the patient sleeps, he is haunted by awful dreams and frightful figures, which seem to excite the greatest terror. The unfortunate victim becomes suspicious of those around him, even his best friends, for fear they will do him some injury. As the disease advances and becomes developed in its worst forms, he becomes constantly haunted with feelings of dread, impending danger, and frightful objects, as serpents, snakes, wild animals, rats, and men who wish to murder him, which he fancies he sees about him, every little while, day and night, asleep or awake. He will, also, in this stage of the disease, very likely try to kill himself, by drowning, by throwing himself from an upper window, or by the use of some instrument. Hence, he will need watching, and sometimes confinement. But it is not necessary to enter into particulars in the description of this disease. It is sufficiently known and recognized wherever it occurs. As to the causes and course of conduct which lead to this dreadful disease, see and read the chapter in the forepart of this book on "Intemperance."

Treatment. — It is not likely that you will ever undertake (unless you are a physician) to treat a serious case of Delirium Tremens. It is a disease which, when once well established, is difficult to treat successfully, and should, by all means, be managed by a skillful physician, where that is possible. Still, it may often be the case with this as with other diseases, that a physician can not at the time be had, and that it is absolutely necessary to do something for the sufferer. Hence it is well to give you an idea of the treatment necessary and proper in such cases, so that you may, at least, manage the case until a physician can be procured. Very little medicine, so that it is of the right kind, will be required. The principal reliance is on Opium and Brandy, or Narcotics, with some Alcoholic Stimulants.

The immediate cause of an attack of Delirium Tremens is generally the sudden stopping or leaving off the use of Ardent Spirits, by such persons as have been in the habit of drinking to excess. Where it occurs in persons while they continue to drink as usual, without any cessation or deprivation, it is apt to be of the worst character and generally beyond the hope of relief. Such cases only occur when the stomach is completely "burnt out," and the whole nervous system utterly prostrated and ruined. But persons who, perhaps, show no signs of the disaase while under the influence of the stimulant, and can have their accustomed daily allowance of liquor, may, on being suddenly deprived of it, have an attack of the disease in its worst form. It is not safe, therefore, in treating a case of this disease, to deprive the patient altogether of the use of Alcoholic Liquor. It will be necessary to give him a little every day, of Brandy or other liquor, gradually diminishing the quantity, as he can bear it. The

circumstances of the case, and the habits of the patient, should be taken into account in determining as to the quantity. From two to four ounces, or at most, half a pint, in twenty-four hours, will be sufficient, in the worst cases, which can be gradually diminished each day, until an ounce a day may be sufficient. When the quantity has been reduced to the smallest allowance, it can be strengthened some by the addition of a little Tincture of Cayenne, thus making it more stimulant, and also changing the character of the stimulant. In this way you may be able to gradually wean off the patient from the use of Alcoholic drinks, and use nothing but the Cayenne, in the form of tea or the tincture diluted with water.

As to medicine, the main thing in a fit of Delirium Tremens, and to relieve the more aggravated symptoms, is Opium. The patient is to take large doses of this drug, in proportion to the severity of the disease—larger generally than a non-professional person, or one who is not a physician, will be likely to think it safe to give. Hence the propriety and necessity, indeed, of sending for a physician. To relieve urgent symptoms, and quiet the nervous system, give the patient a pill of Opium of about three grains, or the size of a small pea, or ordinary sized pill, with a little Brandy or other spirits; and repeat by giving about one grain of Opium every hour for three or four hours, or even more, should it be necessary. The idea is to get the patient under the influence of Opium as soon as you can, and keep him there for some time—more or less, perhaps, for several days. Laudanum will do, if you can not get the Opium—in which case give about sixty drops or a small tea-spoonful in a little Liquor, and about once an hour to once every three hours (according to symptoms), repeat in doses of twenty to thirty drops, until quiet is restored. In the mean time, send for a physician.

Opium and Brandy are the principal remedies in treating a case of Delirium Tremens, until you have at least got the patient over the worst, or relieved of the more urgent symptoms. Extract of Hyoscyamus is also good, being much the same as Opium in its effects, though milder in its operation, and acting more especially as a nervine. If you can get the Hyoscyamus, it would be well to combine it with the Opium, say in pills of about two grains each, giving one pill at a dose; repeat every two to three hours, until the desired effect is produced, and quiet restored.

In this disease, the stomach and liver are generally in a bad condition, while the whole system, indeed, is full of poison. After a day or two, when the patient's nervous system and the more urgent symptoms have been sufficiently quieted, an Emetic should be given, composed of equal parts of Lobelia and Ipecac. It should be given in or with a portion of the same kind of Liquor that the patient has been in the habit of drinking. Accompanying the Emetic with some Warm Drinks or Gruel, and after the operation is over, let the patient take a little Weak Gruel or Broth. If necessary, give some Opium and Brandy.

A very good way to get the poison out of the system is by sweating it out. If convenient to do so, give the patient a Steam or Vapor

Bath about twice a week, and let him take freely of Diaphoretics or Sweating Medicines. The Diaphoretic Powders will do; or, perhaps, the following would be better: Take Spirits of Camphor, Wine, or Tincture of Ipecac, Tincture of Opium, Tincture of Cayenne, and Sweet Spirits of Niter, equal parts, say 1 ounce each; mix, and give in doses of a tea-spoonful once in three hours. Give also, as soon as convenient, an active Cathartic, calculated to act upon the liver. The Anti-bilious or Liver Pills, or pills which contain a portion of the Podophyllin or Extract Mandrake, will be good. Keep the bowels in a regular, soluble condition, if you can, by giving once or twice a week a moderate dose of these pills, or something similar. If the bowels should become too loose, use the Neutralizing Powders freely, combined with the Diaphoretic Powders.

Good nursing, in addition to the foregoing treatment, a mild nourishing diet, and the moderate use of Tonics, Nervines, and, perhaps, Narcotics, as Quinine, Extract Valerian and Hyoscyamus, and a little Opium, together with a moderate allowance of Alcoholic Stimulant, gradually diminished, will be the character of the treatment required. If the patient raves, is furious, or likely to be dangerous to himself or others, he must be confined, or carefully watched and guarded. Mustard draughts to the back of the neck, wrists, legs, and abdomen, may be of service in helping to allay the excitement and delirium, in the first place, in conjunction with the use of Opium and Brandy. But if the case is at all a bad one, by all means send for a physician.

MILK SICKNESS.

THIS is a peculiar disease, confined to certain districts of country in the West and South. It is called Milk Sickness, from the fact that it is generally, if not always, acquired from using the milk, butter, and cheese, which have been obtained from cows infected with some peculiar poison, which they obtain either from drinking the water or cropping the herbage in the infected districts. What this poison is, no one has yet been able to demonstrate. Some think it exists in some undiscovered vegetable or plant; while others believe it to be a mineral poison, existing either in the water in certain localities, or in the earth, whence it rises in the form of a vapor during the night, and settles upon the grass which the cattle eat. My opinion is that the latter theory is the true one; but then it is only an opinion, for there is nothing certain known as to the real cause. An attack of the disease is sometimes preceded for a few days by a feeling of languor, lassitude and general weakness, with a foul tongue and very offensive breath; but it very often comes on

sudden.y, characterized by severe vomiting, great thirst, burning at the pit of the stomach, and obstinate costiveness. It is very difficult to cure, and often proves fatal.

Treatment.—Prompt and efficient measures are required to cure this disease. The most important object to be effected is an action upon the bowels. The most obstinate constipation generally exists, and it will require the most active and powerful measures to overcome it. In the early stage of the disease it is best to give an Emetic, com posed of Lobelia and Ipecac. This will have a tendency to settle the stomach for a while, so that it may retain the Cathartic medicine. There is often no better way — and none so good — to settle the stomach and allay vomiting, than to give a thorough Emetic. Next give some active, quick Cathartic. There is probably nothing better than the Anti-bilious Physic, with a little Cream of Tartar. Apply at the same time a large Mustard Plaster over the stomach, and in half an hour after giving the physic, give a powerful injection, relaxant and cathartic, composed of a table-spoonful of the Anti-bilious Physic, as much Salt, and a tea-spoonful of the Emetic Powder, to which add near a pint of Hot Water; as soon as cool enough, give it by means of a large syringe, and require the patient to retain it as long as possible. If this does not move the bowels within an hour after giving the physic, repeat the dose, following it with another injection. Should these measures fail after repeated trials — which they seldom do — give 10 drops of Croton Oil; repeat the dose every hour, and at the same time rub a tea-spoonful of the Oil upon the abdomen, over the region of the bowels. You need not be afraid to use the Croton Oil in this disease. A whole bottle has been given in a single case, without producing any deleterious effects. But the Anti-bilious Physic, or Jalap and Senna, will, in most cases, be sufficient, with proper injections.

The bowels, when once opened, must be kept open by occasional doses of Physic; then an attempt should be made to sweat the patient. The Vapor Bath, with proper Diaphoretic Teas, and the use of Hot Bricks, should be employed. If you can keep the bowels open for two days, and give the patient a good sweat, you will cure your case.

PAINTERS' COLIC.

THIS disease differs somewhat from other species of Colic, being more violent, the costiveness more obstinate, and attended with more or less paralysis of the bowels and muscles of the abdomen. It is generally caused by inhaling the vapors arising from the different preparations of lead, or from handling them; painters are most liable to its attacks, hence the name of Painters' Colic. It is also called Lead Colic, or *Colica Pictonum.*

The disease usually commences gradually, with pain in the stomach, which extends downward into the bowels, centering about the navel, and, in the more violent stages, shooting off thence toward the sides of the abdomen, accompanied with spasms in the muscles and intestines. There is usually sickness at the stomach; some vomiting; thirst; anxiety; quick, contracted pulse; pallid countenance, with the most obstinate costiveness. As the pain increases, the muscles of the abdomen become contracted into knots, and very painful to the touch; the intestines seem also to be contracted, or so paralyzed that nothing will pass them. There is great danger in this disease of Inflammation of the Bowels, which soon runs into Gangrene, and destroys the patient.

Treatment.—The treatment in this form of Colic, should be very similar to the Bilious form. The first thing to be done, is to overcome the constipation of the bowels. If there is vomiting, give medicines to allay it. Then make use of strong Purgatives, with Hot Fomentations to the bowels. Narcotics and Relaxants are also indicated to relieve the pain, and overcome the spasms. As a narcotic and anodyne, use the Extract of Hyoscyamus; take 20 grains, and form into six pills; give one every two hours. At the same time give the Anti-bilious Physic, and aid the operation with purgative, stimulating and relaxing injections. A portion of the Physic, with a little Salt, a tea-spoonful of Tincture or Powder of Lobelia, and Hot Water, may be used as the injection, to be repeated according to the urgency of the case. Sometimes it will be well to add a little Cayenne to it. Apply Hot Fomentations to the bowels, and if the Physic does not operate in two or three hours, give the Croton Oil, three or four drops at a time, in a spoonful of Castor Oil, or a little Milk, and repeat every two hours. Also rub a little of the Croton Oil on the abdomen, over the bowels. In other respects, treat the same as a severe case of Bilious Colic. It is sometimes well to put the patient into a Warm Bath, for half an hour, or even longer, in order to relax the muscular system, and overcome the spasm of the intestines. After you have got an operation on the bowels, you may give the following pills: Extract of Hyoscyamus, 40 grains; Ipecac, 20 grains; pulverized Opium, 10 grains; Podophyllin, 10 grains; make into twenty pills, and give one every three or four hours.

SALIVATION—MERCURIAL DISEASE.

THIS disease is caused by the use of Mercury in some form or other; most usually as Calomel; and next, perhaps, in the form of Blue Pill. It is too common, and too many have had painful expe-

rience from it, to need any description than that it consists, in its primary effects, in a very sore mouth — sometimes, in bad cases, attended with looseness and falling out of the teeth, swelling of the tongue, ulceration of the throat, gums, and cheeks, and a profuse discharge of saliva or spittle. In its secondary, or constitutional effects, the bones become affected and painful, and the patient suffers more or less with what is termed Mercurial Rheumatism, and a general debility and wasting away of the flesh, or emaciation.

Treatment.— As soon as a person finds that he is salivated from the use of Calomel or other preparation of Mercury, he should, of course, stop taking it (if he has not already done so), and commence taking Sulphur and Cream of Tartar — 2 parts of Sulphur to 1 part of Cream of Tartar, mixed in a little Molasses or Honey, so as to form it into a kind of paste. A full tea-spoonful of this should be taken two or three times a day, or sufficient to operate slightly on the bowels. Sulphur, or Powdered Brimstone, should be used freely in the mouth, so that it may come in contact with the parts affected. In addition to this, if there is ulceration of the gums or mouth, sprinkle occasionally a little powdered Red Chalk, or Red Keel, as it is usually called, on and into the sores. It may generally be had at a drug store. It is the best absorbent and remedy in such cases I have ever found.

Cooling and healing gargles should also be used. The following is good: Take about 1 ounce, each, of Sage, Privet Leaves, and Yellow Root (Golden Seal), and make a pint of decoction by boiling a little while; then strain, add a tea-spoonful of Burnt Alum, and as much Borax, and gargle and wash the mouth.

In order to eradicate the Mercury from the system, or where it has become constitutional, producing Mercurial Rheumatism, and pain in the bones, some powerful Alterative should be taken, such as a strong decoction of the roots of Burdock, Blue Flag, and Yellow Parilla; about 1 pound of the Flag to 2 pounds, each, of the other two; and to every quart of the decoction add 1 dram of Iodide of Potassium. Take a wine-glassful three times a day, and continue its use for several weeks. Keep the bowels open with a pill, taken once or twice a day, made of Extract of Mandrake and powdered Blood Root, or half-grain doses each of Podophyllin and Sanguinin.

POISON FROM THE WILD IVY.

THE poison Rhus, or Wild Ivy, commonly called Poison Vine, grows very common in some parts of the Western country, and some people are very liable to become poisoned with it, whenever it

comes in contact with them. Many persons are entirely unsusceptible to its poison, and even can handle it without experiencing any evil effects from it whatever; while others are so susceptible to its influence that they will be affected by it by merely coming into its immediate vicinity, especially while the dew is on and the air moist; and if they touch it, are sure to be poisoned. It most usually affects the hands and face, and in severe cases resembles a bad case of Erysipelas, swelling the face very much, even to the closing up of the eyes; blisters raise upon the skin, from which a thin, yellowish fluid exudes, and the patient suffers very much. It may extend to any other part of the body with which the poison is brought in contact. Cases have been known where it has disfigured the face worse than the Small-pox, partially destroyed the eyes, and even produced death.

Treatment. — I regard Sweet, or Olive Oil, as an antidote to this, as well as to most Vegetable and Animal Poisons. It is to be taken freely, internally, from a half to a pint or more, in a day. If the case is a bad one, let the patient take about two ounces at a time, every two hours, till at least a pint has been taken. At the same time bathe the face, hands, and parts affected, with Sweet Oil, and cover with bits of silk or thin muslin. The bowels are apt to be costive, and if the Oil does not operate within twelve hours after commencing to take it, give a dose of the Anti-bilious Physic, or a grain or two of Podophyllin, with a little Cream of Tartar. Repeat the Oil next day, and the next, if thought necessary, or until the disease and swelling begin to recede and disappear. There is no danger in the Sweet Oil; it may be taken freely, even to a quart a day, and may be relied on as an infallible remedy.

If ulcers or sores form, wash them out with a strong solution of Potash. Get a little pure Potash, and moisten it with just enough Water to dissolve it, and drop a little of this into the sores; then wash the surface with it by means of a brush or feather. If there is much swelling, or inflammation and pain, apply a poultice of Elm and Sweet Milk. Keep the bowels loose, and occasionally give a dose of the Diaphoretic Powders, to keep up a determination to the surface. But rely on the Sweet Oil.

SNAKE BITE.

THE symptoms attending the bite of the venomous reptiles, as the Rattlesnake, the Moccasin and the Copperhead, are such as not to be easily mistaken, and generally commence to exhibit themselves very soon after the bite. They are nausea and vomiting; swelling, commencing in the part bitten, and extending more or less rapidly

over the whole body; full, strong, excited pulse; the eyes become bloodshot; sometimes there is bleeding from the nose, mouth, and ears; in extreme cases, a bloody sweat breaks out; great pain all through the body, and extreme suffering. These are the symptoms of a bad case. Some persons seem to be much less susceptible to the poison than others. In such the symptoms approach more gradually: and if the bite has been in the foot or hand, the swelling may not extend beyond the limb that is bitten. But the bite of the more venomous snakes, such as I have named, is always to be regarded as dangerous.

Treatment.— The first thing, if it can be done immediately after the bite, should be to draw a cord tightly around the leg or arm (if the bite has been on either), a short distance above the place bitten. The cord or ligature should be drawn tight enough to prevent the blood from circulating in the veins, which will tend to check absorption and prevent the poison from passing into the system. The wound should be sucked freely and perseveringly. If the patient is too faint to do this for himself, a bystander may fearlessly help him; for it is well known that these poisons may be smeared upon the lips and tongue, or even swallowed, with impunity. Then bruise two or three Onions, mix with them a handful of Salt, and apply this over and around the part bitten, first scarifying or enlarging the wound with a sharp instrument, or pen-knife. It would also be well to open a vein near the bite, or at least below the ligature or cord, so as to let out as much of the poisoned blood as possible. This, you can readily see, is highly important. The blood which has been stopped by the ligature has, of necessity, become charged with poison by absorption; hence, if it is allowed to pass into the body, as it would do as soon as the ligature was removed, it would poison the whole circulation. Let it out if you can, but do not remove the ligature so long as the patient can bear it, unless you see that the swelling has extended above and beyond it. In that case the ligature can do no more good. Continue the Onions and Salt, renewing them often. The juice and bruised leaves of the common yard Plantain are also good to apply to the bite.

Internally, give the patient *all the Whisky he can drink.* From a quart to a gallon should be drunk in six or eight hours. No fears need be entertained of making the patient drunk. You may fill him with Whisky, then let him swim in it, and it will not make him drunk, so long as the poison of the snake remains in the system. This is about the only thing that Whisky is really good for. It is a complete antidote for Snakebite, if taken freely, and may be relied on in any and all cases. It should be drunk like water for a few hours, and continued, at short intervals, until the patient gives signs of intoxication, when the quantity should gradually be diminished, as the disease is now beginning to recede. Keep him "under the influence of liquor," however, until you are sure he is out of danger.

The patient should also take a gill of Sweet or Olive Oil, once every

two hours, until four or five doses are taken. It will hasten the cure and also act on the bowels. The Oil may also be rubbed over the swollen parts of the body. As soon as the swelling begins to go down, and the patient seems to be out of danger, or past the worst, give an active purge of Anti-bilious Physic and Mandrake, or Podophyllin, and follow it with a large dose of Sweet Oil. You may rely on Whisky and Sweet Oil to cure any Snakebite, or the bite or sting of any reptile or insect.

HYDROPHOBIA.

THIS disease is communicated by the bite of a rabid animal, the poison being in the saliva of the animal and the wound made in the person bitten. It is also called rabies; the disease being the result of a specific poison secreted by certain animals, the dog particularly, the wolf, etc., while in a state of rabies; fury.

The symptoms are those of painful dread on hearing the motion of water and like sounds; frenzied terror, with difficulty of swallowing; convulsions proceeding to tetanus or lock-jaw, copious secretions of saliva; and death from exhaustion, or from spasmodic seizure of the muscles of respiration.

Preventive Treatment.—Immediately, or as soon as possible, after the bite of the animal, the wound should be washed and cleansed with Aqua Ammonia, from the drug store. If this can not be done immediately, the next best thing is strong Lye, or a strong solution of Saleratus. After cleansing with either, then cut out with a sharp instrument the flesh, so as to take out the entire wound. Take care not to wound an artery in cutting. After this is done, encourage bleeding, if it does not bleed freely, by the application of a cupping-glass—that is, by cupping the wound. A skillful physician or surgeon should perform the operation, if one can be had in time. After the wound has bled freely for a while, wash it out again with the Aqua Ammonia; then cauterize the whole wound with Potassa Fusa, or Caustic Potash, and apply a poultice of Elm and Yeast, so as to produce suppuration as soon as possible, and keep up a *running sore* all the while. As soon as convenient, say within twelve hours, give the patient a thorough Emetic of Lobelia, Ipecac, and Blood Root, equal parts, and follow it with an active Hydragogue Purgative, say of equal parts Anti-bilious Physic, powdered Mandrake, and Cream of Tartar; or three grains of Podophyllin may be used instead of the Mandrake. The Emetic and Purgative are to be repeated once a week, and oftener if the patient should manifest any Hydrophobic symptoms. Next procure a quantity of the common Gray Ash Bark (sometimes called Black Ash), and of the Skull-cap (Scutelaria Lateriaflora), an herb which grows plentifully in some parts of the West, and can generally be had at any Botanic drug store, or of an Eclectic

physician. Of these make a strong infusion, (two parts of the Ash Bark to one of the Skull-cap) of which the patient is to drink about a pint a day, cold. He can take, say a gill, four or five times a day. If the Skull-cap can not be had, use the Ash Bark alone. Continue this course for forty days, should no symptoms of the disease appear; after that, the Emetics may be repeated once in two weeks, and a less quantity of the infusion taken. The bowels, however, must be kept open and loose all the while. *Never allow the patient to become costive.* Some Laxative and Alterative Pills should be taken every day, or every other day, such as Podophyllin, Sanguinin, Leptandrin, and Iridin, 20 grains of each, made into forty pills, with Extract of Dandelion, and take one pill a day. The wound is to be kept open, and a running discharge kept up during the whole course of treatment; whenever it begins to heal, apply the Vegetable Caustic, or Caustic Potash, and continue to poultice.

Mr. J. W. Seccomb, of Rockfalls, Ills., writing February 24th, 1874, calls the Skull-cap "a sure cure," and states that his father cured nineteen cases of Hydrophobia in his practice as a physician by the use of it. Mr. James A. Hubbard, of Bond Co., Ills., furnishes, in writing to the *St. Louis Republican*, strong proof that he and his brother, when ten to twelve years of age, were bitten by a mad dog, and were cured by the use of Upland Ash. He says: "Take the root of common Upland Ash, pull off the bark and let it boil to a strong decoction; of this drink freely."

About the thirteenth to the fifteenth day, there usually appears under the patient's tongue, it is said, several small pustules, containing a yellowish watery fluid. This is about the period when the first paroxysms are apt to make their appearance, and the pustules on the under surface of the tongue are not only regarded as among the premonitory symptoms, but as containing the virus, or peculiar poison, which causes the disease. It is believed that if they are opened as soon as they appear, or before the poison is absorbed, and thoroughly cleansed, the disease will be prevented. They should, therefore, be looked for from about the twelfth day, and, as soon as discovered, punctured, and the mouth washed out with some strong Alkaline Solution, as Potash, Saleratus, or Aqua Ammonia.

The foregoing measures, if thoroughly carried out, it is believed, will prevent the development of the disease, and completely eradicate the virus from the system. In every case, so far as known, where this course has been followed, it has been successful, even in instances where other persons bitten by the same dog, and not subjected to this treatment, have died of the disease.

Treatment. — Where the disease has developed itself, and paroxysms have actually appeared, the first thing to be done after properly confining the patient (if that should be necessary), should be to put him under the influence of Lobelia. The Compound Tincture, or what is called Thomson's Third Preparation, is perhaps the best; but if you have not this, the strong, saturated Tincture of the Lobelia Seed, two parts, to one part Tincture of Cayenne, will do. Give it freely, in table-spoonful doses, every few minutes, even to the extent of producing what was formerly called the "alarming symptoms."

There are no symptoms that can be produced by Lobelia so "alarming" as those of Hydrophobia. Apply drafts of Mustard and Cayenne, moistened with Vinegar, to the feet and legs, first applying Spirits of Turpentine. Make use of powerful counter-irritation along the whole course of the spine, by the application of strong stimulating Liniments. If the original wound has been allowed to heal, it must be cauterized with Caustic Potash, and a poultice applied, so as to get up and keep up a discharge from it. As soon as practicable, submit the patient to the Vapor, or Alcoholic Bath. The latter is probably the best, and is produced in the following way: Strip the patient and seat him in a chair, with a blanket thrown around the shoulders, and allowed to fall to the floor, outside of the chair; place under the chair, on the floor, a saucer or vessel with Alcohol in it; set it on fire, and let it burn. If it burns too rapidly, add a little Water to the Alcohol, or some Whisky. When it burns out, add more Alcohol, and continue it till you have produced a copious perspiration. Continue it at least half an hour. At the same time, commencing a little while previous to the Hot Bath, it might be well for the patient to take small doses of Aqua Ammonia, and continue it during the bath. Prof. King, of the Eclectic College of Cincinnati, recommends the Ammonia very highly in such cases. You may combine it with equal parts, each, of Tinctures Lobelia and Cayenne, and give of the compound in tea-spoonful doses every five minutes, in a little Skull-cap, Lady-slipper, or Ginger Tea. If the patient can not sit up to take the bath, he must be confined in bed, and Hot Bricks or Rocks wrapped in cloths, wet with Vinegar and Water, placed about him, so as to get up an external heat in this way, giving him at the same time the Lobelia, Cayenne, and Ammonia. Produce, if possible, a thorough Sweat; the Ammonia will tend greatly to aid the process, as well as to counteract the poison, and drive it out of the system through the skin. The patient should be kept well under the influence of Lobelia for at least twenty-four hours, and whenever there are signs of a relapse, increase the quantity. If the patient can not swallow, give it by injection in the form of an infusion of the seed or herb. The Ammonia may also be continued, in small quantities, say a tea-spoonful once every hour or two. As soon as the effects of the paroxysm have passed off, or you have got a complete intermission, commence giving the preparation mentioned as a preventive — the infusion of Gray Ash Bark and Skull-cap. If you can not get the Skull-cap, use the Lady-slipper Root, and if not that, the Bark alone. Continue the infusion throughout, and resort to the Lobelia every time there is the least return of the symptoms. Keep the bowels regular, and the skin open and active by repeated washings and friction. A number of well-marked cases of Hydrophobia have been cured by this plan. Indeed, there has never been a failure. Do not conclude, therefore, that Hydrophobia is incurable.

Dr. J. H. Jordan, writing further, May, 1886, says:—

"I have seen the madstone applied a number of times, and have never known it to fail, nor have I ever heard of its failure.

"When I was a young man, nearly fifty years ago, for two or three summers there was a sort of epidemic of Hydrophobia, or of mad dogs

in our neighborhood, near Georgetown, Vermilion County, Ills., and there were a number of persons bitten by rabid dogs, as well as a large number of horses, cattle, hogs and sheep. Luckily, there was a genuine madstone in the neighborhood, and it was duly applied to the wounds of the persons so bitten, and it saved them all; while the beasts, etc., bitten all 'went mad,' and died or were killed. Now these are facts to my certain knowledge, and I presume to the knowledge of others still living.

"Of course, there are skeptics in regard to the madstone, as there are skeptics in regard to most other important facts and truths—even the truths of Holy Writ. But to be a remedy, or rather a preventive, it must be applied to the wound caused by the bite of the rabid animal as soon as possible—certainly within two or three days, but the sooner the better, and before the wound begins to heal.

"I have no doubt but there are quite a number of genuine madstones in the United States, possibly half a hundred or more, and their owners ought to be looked up and located. (The *Kansas City Times* (1886) says Maj. J. M. Dickson of that city has a madstone which has cured hundreds of Hydrophobia.

"As to Prof. Pasteur's plan of inoculation as a preventive, pursued by him in his Institute at Paris, I have nothing to say, as I know nothing. We must await further knowledge of his brilliant experiments."

POISONS, AND THEIR ANTIDOTES.

AN interesting chapter might be compiled on the various treatises which have appeared since the first work on Poisons was written, 150 B. C., by Nicander of Golophon, the Greek grammarian, poet, and physician. So, again, it would not be difficult to engross the attention by treating of the fate of Socrates, who, according to Plato, was made to drink hemlock (about 400 B. C.), this being one of the Athenian modes of execution; of Demosthenes, who committed suicide by poison, 322 B. C.; of Hannibal, who terminated his existence in the same way, 182 B. C.; or of Cleopatra, Queen of Egypt, so celebrated for her beauty and intrigues, who, rather than fall into the hands of the conqueror Augustus, destroyed herself by the bite of an asp.

It appears scarcely possible to give any definition of a Poison which will bear a critical examination. Most medicines are poisonous in improper doses; and even common Salt (Chloride of Sodium) has caused death. In the year 1839, a young lady residing in the north of England took about half a pound of Salt to rid herself of Worms. Very soon afterwards she began to suffer from all the effects of an irritant poison, with general paralysis; and in spite of the use of the Stomach-pump and of antidotes, she died in a few hours. Dr. Christison has recorded two somewhat similar cases. Dr. Guy defines a Poison to be any substance, which, when applied to the body exter nally, or in any way introduced into the system, without acting

mechanically, but by its own inherent qualities, is capable of destroying life.

Any substance which can injure the health or destroy life is regarded as a Poison, if given with the *intent* to do mischief.

It is then very important to know what to do in case of swallowing Poison, as such accidents frequently occur, and may happen at any time. Thousands of persons die annually from Poisoning and other causes, who might be saved by the timely application of some simple remedy or antidote, if only known and properly used. There are various antidotes for Poison, and different Poisons require different antidotes; but there is one simple and very common article to be found in almost every house in the land, which, as an antidote or remedy in case of swallowing Poison of any kind, should stand at the head of the list of remedies. It is nothing more nor less than ground or powdered Mustard Seed. It is to be used as an emetic, and is preferable to other emetics on account of its being instantaneous in its effects, especially in cases of Narcotic Poisons, and also more certain. It should be used as soon after the Poison has been taken into the stomach as possible — before it has had time to become absorbed, or to produce its specific injurious effects. Mix a tablespoonful of the Mustard with a tumblerful of Warm Water, and swallow it immediately. It acts as an instantaneous emetic, frees the stomach of its contents, and can be used with safety in any and all cases. Every family should — as most families do — keep a supply of good Mustard always on hand. In case of taking Poison into the stomach — whether it be vegetable, mineral, or animal — the Mustard remedy should be first used; after that, other remedies, such as are indicated by the particular Poison.

I will now give you the names of the ordinary or most common poisons to be met with, and their best ANTIDOTES — such as are most readily obtained, and may be used freely and safely.

ARSENIC (*Including White, Yellow, and Red Arsenic; Paris Green; Fowler's Solution, and all Arsenical Preparations.*) — Remedies: Give freely of Warm Water and Warm New Milk; an Emetic of Sulphate of Zinc (White Vitriol), about a tea-spoonful, in a little Warm Water; equal parts of Red Oxide of Iron and Carbonate of Magnesia, mixed with Warm Water, giving freely; or scrape the rust from old Iron, mix with Warm Water, and give freely. Give Gruel and Flax-seed Tea; and injections of Gruel or Starch. A mixture of Sweet Milk, Lime-water, and the whites of Eggs, taken freely, is also good. Hydrated Peroxide of Iron is the specific antidote to Arsenic, in tablespoonful doses, every 5 or 10 minutes.

ANTIMONY (*Tartar-Emetic.*) — Remedies: Tannic Acid; or a strong

decoction of Green Tea; or of Oak Bark; or decoction or powder of Peruvian Bark. It will not be necessary to give the Mustard, or any other emetic, as the Antimony will produce sufficient vomiting. Promote vomiting by giving freely of Warm Water and Sugar, warm Tea, and the like; and as soon as the vomiting has subsided, give a grain of Opium or 30 or 40 drops of Laudanum, in a little sweetened Warm Water, and repeat two or three times every half hour. Cinchona Bark in tincture or powder may be given advantageously.

Mercury (*Corrosive Sublimate; Calomel; Red Precipitate; Vermilion Red, etc.*)—Remedies: A strong solution of Saleratus, in Warm Water, and the whites of Eggs—*followed* with a prompt Emetic of Mustard. Then give freely of whites of Eggs; fresh Milk; Flour and Water mixed pretty thick; Flax-seed Tea; Saleratus Water, or weak Lye. The after-treatment demands a few words of notice. The free use of demulcent drinks, Milk, and Ice will be very grateful to the patient's feelings. Gargles of Alum, or Borax, do some good. Opiates may be given in small doses, if there be much pain. And we should allow only a milk or farinaceous diet. Chlorate of Potash has been recommended to check the salivation. The most useful remedy, however, is the Iodide of Potassium; for this salt destroys the compounds formed by the union of Mercury with certain of the tissues, and eliminates the poison through the kidneys.

Strychnine (*Nux Vomica or Dog-button.*)—Remedies: Quick Emetic—Mustard the best. At the same time and afterward, give freely of Camphor; the Tincture or Spirits of Camphor, if you have not the Gum. 20 grains of Camphor in powder given at a time, and repeated three or four times at intervals of 15 or 20 minutes. When the patient is unable to swallow, a dram of Sulphate of Zinc, or a couple of ounces of Ipecacuanha Wine, should be injected into the rectum. Then an ounce or two of Castor Oil, perhaps with a couple of drops of Croton Oil, is to be administered.

Iodine forms a crystallizable compound with Strychnia. Dr. Bennett, of Sydney, has recorded an instance in which he attributed recovery to the employment of Tincture of Iodine. Hence, from thirty minims to a dram of this tincture may be given. In its absence, three or four ounces of Animal Charcoal, diffused through water, ought to be given. The patient is to be kept warm, and sweating induced if possible.

Oxalic Acid.—Remedies: Give freely of powdered Chalk and Water, or Magnesia and Water; also a mixture of Lime-water, and any Oil that may be handy. Give as soon as possible to be effective. The plaster from the ceiling or partition of a room may be given in

the absence of the remedies above named. Afterward give an active Cathartic.

Prussic Acid. — Remedies: It is seldom possible to afford any relief in case Prussic Acid has been taken. The antidotes recommended are, to inject into the stomach Chlorine; also the Oxide of Iron, for the person will not be able to swallow.

Attempts must be made to restore animation by cold affusion, stimulating frictions to the chest and abdomen, warmth to the surface, and the application of Ammonia to the nostrils. Cold affusion over the head and neck has proved the most efficacious, when promptly resorted to, and repeated at short intervals so as to cause a shock.

If recovery ensue from the immediate effects, vomiting should be produced by emetics; after which strong Coffee, with Brandy, ought to be administered.

Nitric and Sulphuric Acids (*Aqua Fortis and Oil of Vitriol.*) — Remedies: Give freely of Calcined Magnesia in a little Water; or Chalk; strong Soap and Water is an efficient remedy, and is always on hand; also an Emetic. If nothing better at hand, give freely of a mixture of Wood-ashes and Sweet Milk. *Alkalies* are the remedies. When Sulphuric Acid has been taken, the use of much Water will be improper; but oleaginous and mucilaginous fluids, as Olive Oil, Linseed Tea, Barley Water, Milk, Gruel, etc., may be freely given, either alone, or as the vehicles of the antidote. The success of this treatment will depend upon the promptitude with which it is adopted.

Copper (*Blue Vitriol, or Blue Stone; Verdigris, etc.*) — Remedies: The whites of Eggs to be taken freely, mixed with a little Water — take as much as the white of an Egg every two or three minutes until a dozen or so are taken; also, Prussian Blue; very strong Coffee; Vinegar; strong decoction of Oak Bark, or Peruvian Bark; Saleratus Water. Give freely of Sweet Milk, Warm Water, and an Emetic.

Nitrate of Silver (*Lunar Caustic.*) — Remedies: Give freely of Salt and Water; and afterward Milk, and Sweet or Castor Oil.

Alkalies (*Caustic Potash, Ammonia, Lime, etc.*) — Remedies: Give freely of Vinegar, and Vegetable Acids; and follow with Flax-seed Tea and Milk, freely allowing acidulated demulcent drinks, orange-juice, etc. The use of oil has been recommended, on the principle that it converts the alkali into a soap. Its efficacy is doubtful.

Lead (*Sugar of Lead, Red Lead, etc.*) — Remedies: Epsom or Glauber's Salts, or Plaster of Paris, Magnesia; an Emetic of Mustard. As a purgative, no remedy is better than Croton Oil.

Opium (*Laudanum, Morphine, etc.*) — Remedies: A prompt Emetic;

then give very strong Coffee; strong Tea; Tincture of Nut-galls. If the patient can not swallow, the Stomach-pump must be used, and the stomach washed out and cleaned until free from the smell of Opium. An Emetic of half a dram of Sulphate of Zinc should be given, or a table-spoonful of Mustard must be employed; being administered by injection if there is inability to swallow. The patient at the same time is to be prevented as much as possible from going to sleep. When the stomach has been thoroughly emptied, every means must be adopted to keep the patient roused. This is to be effected by dashing cold water over his head and chest, walking him quickly up and down between two attendants in the open air, irritating his legs by flagellation with a wet towel, applying electro-magnetic shocks to the spine, and administering strong Coffee. If there is much depression, Alcoholic stimulants are to be given. Bleeding has been recommended; but it is only to be used after the poison has been removed from the stomach, and when, from the coma and full pulse, we are sure that there is cerebral congestion. In extreme cases artificial respiration must be tried.

The remedies recommended must be perseveringly used; remembering that as long as life lasts, hope of recovery is not to be banished. In the great majority of cases the treatment is successful.

Other Narcotic Poisons (*Bane Berries, Wild Parsley, Nightshade, Poison Hemlock, Jimson Weed, etc.*)—Remedies: Give Mustard Emetic, large draughts of fresh Milk, plenty of Sweet Oil, strong Coffee; dash cold Water in the face, and over the chest; apply Mustard poultices, and keep the patient awake and *walking* as much as possible.

Cantharides (*Spanish Flies.*)—No antidote is known. Vomiting must be excited or encouraged; and Linseed Tea, or Gum Water, or Gruel copiously administered. The Warm-Bath will afford great relief. Oil must be avoided on account of its being a solvent of the active principle (cantharidine) of this poison.

Vegetable Irritants.— These are very numerous, and are most of them employed as medicines. It is only, therefore, when given in undue proportions, that they excite serious symptoms. The most important are — Aloes, Bryony, Capsicum, Castor Oil Seeds, Croton Oil Seeds, Creosote, Colocynth, Elder, Gamboge, Jalap, Mesereon, Mustard, Savin, Scrammony, Sorrel, and Turpentine.

The symptoms are those of irritation of the intestinal canal, severe pain, vomiting, diarrhea, tenismus, etc.; followed by collapse, cold sweats, and occasional convulsions. These effects may also be produced by disease and decayed vegetables.

The treatment must be directed to the removal of the injurious substance by Emetics, etc., unless spontaneous vomiting has freely

taken place, when it may merely be encouraged by the use of dilu ents.

Poisonous Fish.—Several kinds of fish are constantly poisonous, while some only act injuriously on particular constitutions. The chief effects are irritation of the eyes, depression, and severe urticaria or nettle rash. In this country the different varieties of shell fish are the most frequently injurious, especially cockles, muscles, crabs, and such like.

Poisonous Meats.—The flesh of animals that have died of disease has produced serious symptoms when eaten, and even destroyed life. Several substances, as sausages, cheese, bacon, etc., have become poisonous. In these days much light has been thrown on that part of the subject which relates to disease from sausages, pork and bacon, owing to the discovery in such foods—generally such as have not been thoroughly cooked—of trichinæ and other parasitic forms of life.

We have come to know, also, that milk may be the bearer of various organic poisons, such as poisons of Typhoid Fever, Cholera, and probably Diphtheria; a pregnant contingency, and one that it is difficult to prepare for.

The treatment in these instances should consist in the use of Emetics, Purgatives, and Diluents. The vital powers must be supported by stimulants, tonics, nutritious diet, etc.

As a general rule, after poisons that cause vomiting, pain in the stomach and bowels, and purging, give Chalk, Magnesia, fresh Milk, the whites of Eggs (raw), Sweet Oil, or if not that, any other Oil that is handy, as Lard, Castor, or Linseed; Butter, Warm Water, and the like. After Acid poisons, give Alkalies, as Saleratus, weak Lye, Lime-water, and the like. After poisons that produce sleepiness, delirium, or raving, give Emetics and Stimulants, such as Camphor and strong Coffee, and keep the patient awake. When you don't know what to give — not knowing what the poison is — give Magnesia or Chalk, Charcoal, and Red Oxide of Iron, equal parts, mixed in Warm Water; also, plenty of Sweet Oil. Always remember that Sweet or Olive Oil is an antidote to all Vegetable and Animal Poisons, as well as most Mineral Poisons. Give it freely.

DISEASES FROM CHLORAL—CHLORALISM.

THE saline substance known as Chloral Hydrate was introduced as a narcotic by Dr. Liebreich, of Berlin, in 1869. As there were and are opium-eaters and dipsomaniacs, so there are now large numbers of people who have become habitual consumers of Chloral. The symptoms of Chloralism are well marked. The craving for the narcotic is extreme, and sleep is but rarely obtained without it. Consequently, the digestion suffers, the appetite becomes poor, and the secretions unhealthy. The pulse sometimes full and bounding, and at others feeble and irresolute, and the action of the heart irregular, irritable and intermittent. Following these, the mind becomes enfeebled and the temper capricious. Under slight excitement the face will flush and the eyes redden, while the gait will be rendered unsteady. Take warning, and avoid so unfortunate and terrible an outcome by *touching not*, unless prescribed and urged to use it by a wise and careful physician, and for a very brief period.

FIFTH DIVISION.

DISEASES OF WOMEN.

INTRODUCTION.

NO other affection can be compared with the love of a devoted wife; her aim will ever be to have joy, peace and happiness pervade her home. When the day, with its cares and duties, its burdens and trials, is past, how sweet to have some little quiet spot, to which we can flee, and find a balm for all our cares and troubles; to have, amid the turmoil and bustle of life, a dear wife, to whom we can reveal our cares, and thereby obtain the relief that our weary minds so much need! Oh! the rapture that words can not express, the joy that language can not define, that is found within the hallowed influence of home! Sympathy, devotion, peace, are there found in the affection and embrace of a devoted, earnest, and kind wife. If there is one moral feeling free from the impurities of earthly frailty, that tells us in its slightest breathings of its celestial origin, it is that of woman's love — the first, the fondest, and the most lasting cord with which affection can bind the heart of man! The devoted love of woman is not a feeling of yesterday or to-day — it is, from the beginning, the same and unchangeable — it owes not its being to this world, but is heavenly in its glow; enduring while one pulse of life animates the breast that fosters it; and if there be any thing of mortality that survives the grave, surely this best and noblest passion will never perish. Oh! it is a pure and holy emanation of Heaven's mercy, implanted in the heart of woman for the dearest and wisest purposes, to be the truest and most faithful friend of man through life's weary pilgrimage. She is the guardian angel, when pain and sickness come. It is no selfish passion, depending for its permanency upon reciprocal advantages; but, in its sincerity, it casteth out itself, and centers only in the happiness of its object. When the welfare of that object is at stake, it putteth away fear, and knoweth not weari

ness; amidst conflicting hopes, fears, and anxieties, her bosom is the balmy pillow upon which the weary head may rest. When struggling in the wide ocean of a tempestuous world, what eye gazes on our adventurous voyage with half the fond eagerness of woman? amid the sad, yet not unpleasant uprising of hopes and fears, how deep the anxieties of that faithful heart!

It is not Prosperity, with her winning smiles, that tries the purity and fervor of woman's love; it is the dark and dreary round of adversity, amid the cold frowns of an unfeeling world; in poverty and despair, in sickness and sorrow, that it shines with a brightness beyond mortality, and, stifling the secret agonies of its own bosom, strives to pour balm and consolation on the wounded sufferer. The cup of misery, filled as it is to overflowing, serves but to bind the two still more firmly and dearly to each other, as the storms of winter but bid the sheltering ivy twine itself more closely round the withered oak.

What great injustice is often done to women, and how little known — little cared for — are many of the sufferings and trials which circumstances and disease inflict upon them through a life of domestic toil, amid man's ignorance and ingratitude! It is impossible to form a correct opinion of the mental and physical suffering frequently endured from her sexual condition, caused by her monthly periods, which it has pleased her Heavenly Father to attach to woman — the mother of the world — the one who, in soft endearments of love, brings to us a vision of Heaven. Although the rose of Purity was stained by the polluting voice of the serpent, yet it was a voice of Mercy that exclaimed, "It is not good for man to be alone," bidding him seek for a pearl of great price — woman's love — to cheer his path through a world of clouds and storms, until at last, when the decaying sparks of life shall feebly glimmer in this earthly tabernacle, man looks forward to that blessed hope beyond the grave, of meeting again the dear mother of his children, the companion and participant of all his earthly toils, "where they shall go out no more forever." Were it not for woman, every man would be left to battle with attacks of illness as he could. No kind and gentle voice would be raised to cheer him in the hours of affliction and sorrow; no friendly hand put forth in offices of kindness; no midnight watcher to nurse and soothe him in sickness; life would be a cheerless blank, and Hope's sweet syren voice be heard no more. 'Tis woman's love which gives exercise to the noblest charities of our nature. When we reflect how many of the cares of a family devolve upon her—her trials, sufferings, and misfortunes—we can not but admire the fortitude, the courage, the devotedness, and heroic virtues of woman.

How gentle and welcome are the tones of a woman's voice! They come to a wounded spirit like the summer breeze over a sick man's brow. Her presence can call forth every cheerful and happy thought, and banish sadness and solitude from every wounded heart. Such is the wife of his bosom, the chosen companion, the voluntary sharer of his prosperity and misfortunes, the mother of his children — she who awaits the home-coming of one in whose presence alone her eye can brighten, and sadness and solitude be felt no more.

The affections of others may be founded upon Passion, and may wither away to nothing as time travels down to oblivion — man's friendships may decay, and youthful loves be superseded by cold indifference; but with woman one feeling predominates to the latest breathings of existence — knowing no shadow, seeing no blight — the pure, devoted love of a faithful wife and mother. The chains of friendship may be joined together by years of long-tried experience, and the ties of natural love be tested by the strong gales of adversity; yet when contrasted with that self-evident, all-enduring emotion of a mother's love, they with all other mortal affections, shrink into comparative insignificance before the fervent devotion of this imperishable sentiment. Who that has seen an anxious mother watching over the cradle of her sick child, marking with most intense interest the faintest change of its countenance — who, I ask, that has seen the fluctuating expression of that mother's sleepless eye, can hesitate in declaring that the emotion which prompts her actions, has no parallel in the bosoms of mankind? Nights of watchfulness, days of unwearied fatigue, and a life-time of numberless deprivations, will all be patiently borne by a mother. Oh! that love can not be less than a relic of paradise — a pure and hallowed perception in the dark days of misfortune. When all consolations have sunk back into chaos — when our youthful friends and school companions have forsaken us — when shame and poverty have descended heavily and witheringly upon our names and fortunes — and even when a father's voice has exclaimed, "Away! I know you not" — then it is that a dear mother's love, like an imperishable sun, can not go out; its nature is coequal with her life, and one is extinguished only with the other. She will say, "Thou art my child; and though the hard-hearted world spurn thee; though thou art friendless and covered with shame, yet thy dear mother can not forsake thee!" In a mother's love there is no insincerity; there are no modulations by fortune; but it lives and is nourished as intensely in the humble cottage as in the palace of kings. Its residence is in the center of her heart, whence it flows through every essence of feeling, quickening with its blessed influence the slightest thoughts and actions. Then how

can man repay all the faithful tenderness of woman's devoted affection? The fickleness of woman is frequently the result of the carelessness of man; for even in her most excitable moments—for there is no perfection—she can be easily subdued by kindness; and it is the duty of man to reflect, and make due allowance for the feelings of woman, in consideration of the multiplicity of diseases which are entailed upon her by Nature, and which affect her nervous system to a very great extent. Remember, then, the words of our blessed Saviour, "Neither do I condemn thee; go, and sin no more." Rejoice, then, Oh! woman, that thy soul is trained by trials and afflictions; as for this end wast thou created, that through submission and weakness the goodness of God might be made manifest to man in Him who said, "Come unto me all ye ends of the earth and be saved, without money and without price."

> Not she with trait'rous kiss her Saviour stung—
> Not she denied him with unholy tongue;
> She, when apostles shrank, could danger brave,
> Last at the cross, and earliest at the grave.

MIDWIFERY.

LABOR, OR CHILDBIRTH.

AT the end of nine months from the time of conception, the natural period of Pregnancy is accomplished. Some women are a day or two earlier, others a day or two later; but they usually have their child in forty weeks from the time of conception. When a woman is about to be confined, or approaching this period, it is not unusual for her to be troubled with irregular pains for several days previous to her labor; these are called False Pains, and are usually most troublesome during the night. They do not bear down like real Labor Pains, but are sharp, last for a few moments, and then pass off. In real labor, there is a discharge from the vagina or privates. When the pains are suspected to be false, it will be necessary to relieve them by warm drinks, such as Hop Tea, Sage Tea, Balm Tea, Poppy Tea, or a little Camphor and Hot Water mixed. If these do not succeed, give two tea-spoonfuls of Paregoric, or twenty or thirty drops of Laudanum; which may be repeated, if necessary, every three or

four hours. When the pains come on at regular intervals, or gradually increase in severity, and are attended with a bearing down sensation, a looseness of the bowels, frequent inclination to make water, and a slight discharge, or moisture of the organs of generation, it will be presumable that true labor has begun, however slow or feeble it may be at the commencement; the discharge, which is called a "show," is often colored, and sometimes there is an appearance of fresh blood. Should the case prove tedious, the pains not strong and irregular, then bathe the feet in Hot Water, and give some Warm Tea; this will often be followed by a good effect, and the pains will become more regular. If the bowels are costive, a dose of Castor Oil, or an injection of Salt and Water, will produce an operation, relieve the lower bowels, and advance the process of the labor; this ought never to be neglected when the bowels are not open, or costive. Drinking freely of Cold Water often increases the pains, and may be used with perfect safety.

As soon as labor commences, the belly sinks, the dress becomes loose, and there seems to be a descent of the womb into the bottom of the belly; the motions and weight of the child are felt to be lower than formerly, and the head of the fœtus, or child, falls down to the orifice of the womb and presses upon it. The physical causes that determine the exit of the fœtus, or child, are the contraction of the uterus and that of the abdominal muscles. By their force the mucous secretion takes place; this lubricates the parts, and the mouth of the womb gradually undergoes dilatation, or opening, increasing at each bearing down. As the process of labor advances, the finger, directed into the vagina, will find a considerable tumor; this contains the fœtus; the pains now gradually increase, the pulse becomes stronger and more powerful, the face is flushed, perspiration flows in abundance, and the whole body is in extreme agitation. The process still goes on; the pains are now more frequent, stronger, and lasting; presently a strong pain comes on, and suddenly the water, medically called *Liquor Amnii*, gushes out, wetting the bed. There is now a longer interval between the pains, and on the midwife introducing her finger, she will discover a great change — a large, round, hard substance is felt, which she at once knows to be the head of the child. The pain returns again, the woman becomes more distressed, the face looks intensely red, accompanied with a trembling of the lower limbs; the pains are much longer; she lays hold of a towel, which is commonly fastened to the bedpost for the purpose, and she bears down with all her might, exclaiming, "Oh! when will all this be over?" It is impossible to express the impatience, to depict the suffering of this awful and critical moment. The head of the child descends

lower and lower into the vagina, or water-passage, until it firmly presses on the perineum, and shows itself at the outward or external orifice. In some instances, if it be the first child, it is apt to remain some time before it is expelled; if she has had the second or third child, or more, a few pains will generally complete the work. But in every instance, let me impress on your mind *patience;* and let Nature alone, for she will accomplish the labor.

An occurrence transpired in Louisville, Ky., a few years since, when a lady was in labor with her first child for three days, attended by two of the most distinguished physicians of that city. From the intense suffering of the patient, a surgical operation was deemed necessary. With much difficulty, I succeeded in delaying it, and on the fourth morning she was delivered of a healthy female child, which is now living. How many lives of women and children might be saved by avoiding active remedies! But the desire to be thought superior has often made men selfishly alive to what the world calls professional skill; and instead of waiting for what God, in His infinite wisdom, has directed in His own due time, they often force Nature, which frequently destroys the general health, and, in many cases, ends in the most fatal consequences, such as Flooding, Inflammation of the Womb, Childbed or Puerperal Fever, Prolapsus Uteri, or Falling of the Womb, etc. Most cases of Inverted Uterus are produced by improper pulling at the cord.

The pains and suffering connected with birth, or parturition, are often great and protracted. When the trial comes, the fortitude and resignation with which those sufferings are borne by the most delicate females, should call forth the kindness and sympathy of man. That women generally endure pain and sickness with more fortitude and patience than men, is evident. Looking forward with the pleasing hope of being the mother of a tender offspring, upon which she can lavish her affection and tenderness, sustains her in fulfilling the conditional requirements of Nature. Few men could be induced, for any consideration, to suffer in a similar manner. Then, how imperative the duty of every husband to be kind to the mother of his children, and to sustain her amidst her trials and afflictions; for God has devolved this sacred trust on man, that his smile and tenderness should soothe her in the moments of sorrow. It is in moments like these which give exercise to the noblest charities of our nature, in offices of kindness to our best and most devoted friend on earth, a faithful and affectionate wife. The female constitution being of a more delicate conformation, and having a finer texture of nerves than the other sex, gives woman a quickness of sensibility and great promptitude of expression; it softens their manners, refines their

ideas, and produces a lively sense of pleasure and pain; but while they enjoy these advantages, the peculiar construction of their frame subjects them to painful and critical vicissitudes, that affect not only their health, but also their temper, which fully entitle them to all possible lenity and indulgence.

In a long practice in my profession, how continuously have I witnessed effects from these causes on the functions of the sexual organs! Every part of the animal economy is inflamed by the Passions, but none more so than the Uterus or Womb. Anger, Fear, Grief, and other affections of the mind, often occasion obstructions of the Menstrual Discharge and of the Womb, which prove very difficult to cure, unless by careful and skillful treatment. I trust I have been sufficiently explicit in my directions to place you upon your guard, so that you may be circumspect in your conduct at such times, for females have sufferings to endure, from diseases of the Womb and other afflictions, that will be hereafter mentioned, which should call forth the indulgence and sympathies of every noble and feeling heart.

Treatment.—The parts of generation, during labor, should always be well oiled, or greased with Lard, as it greatly assists, and mitigates the suffering, and lubricates the parts or passage. When the infant gradually advances, enlarging the passage so that the crown of the head may be felt, the birth is then advanced one-third. When advanced forward as far as the ears, it is then in the vagina, or passage; if the membranes have not already burst, they may now be opened, and the waters, by their effusion, will render the vagina slippery, and promote the birth of the child. After the child is born, there is a freedom from pain, and the mother feels rejoiced, and "thanks God" for the sudden transition from pain and severe suffering to comparative ease.

The navel-string may be divided as soon as the child is born, or a few minutes afterward, giving time to establish fairly, by breathing or crying, the new mode of life. I generally let it remain five or ten minutes, until the cord ceases to beat, before its connection with the mother is severed, or the navel-string is cut. If separated immediately after birth, it may do an injury: therefore it is advisable to let it remain on the bed for a few minutes. As soon as you see signs of life established in the child, the navel-string must be tied with a small cord, made of a few threads well twisted together, or waxed so as to make it strong. First tie the naval-string two inches from the belly of the child, then again two inches from the first, so as to leave a space between, and, with a sharp pair of scissors, cut the cord or navel-string so as to separate the child from the mother. The cord should be well tied, two inches from the belly, as the child may otherwise lose its life by the loss of blood; then attend to it, and see that the string does not come off. If it does, another string must be tied immediately around it, as serious accidents have frequently occurred by this neglect — the child bleeding to death. The child, on being

taken away or separated from the mother, is to be placed in flannel in the arms of the nurse, and put in a moderately warm situation.

The After-birth should next be attended to. Generally, from twenty to thirty minutes elapse between the birth of the child and the expulsion of the Placenta, or After-birth. In a large proportion of cases, the After-birth will come away generally in the course of ten or twenty minutes after the birth of the child. It will be proper, however, to catch hold of the cord, and carefully ascertain if the Placenta can be felt in the passage, and whether the woman is losing more blood than is natural at such a time. If the Placenta can be felt in the passage, no great danger need be apprehended, as a few pains, a little gentle motion, and very moderate extension of the cord, will deliver it safely. When it remains high up in the abdomen, however, and especially if there be an unusual loss of blood, the action of the womb must be promoted by pressing and kneading the lower part of the bowels, by grasping or squeezing the womb gently in the hand, at the same time pulling very moderately and moving the cord, so as to make the extension in different directions. Great care is necessary in these cases not to pull so hard as to break or separate the cord from the Placenta, nor to bring down the womb — the latter of which accidents would be fatal, and the former, to say the least of it, very troublesome.

In cases of excessive Flooding, whether the After-birth has come away or not, the woman should be placed upon her back, with her head and shoulders low, be kept perfectly still, and cold Vinegar, Spirits, or Water applied freely to the lower part of the bowels and birth-place, by means of Cotton or Linen Cloths, which should be changed every few minutes until the Flooding is arrested. If the After-birth be retained in the womb, do not hurry it, but wait for the pains to come on. Great care is necessary, in these cases, not to pull so hard as to break or to separate the cord from the Placenta. The woman should blow in her hands, so as to force the pain downward. Sometimes a change of position assists the After-birth to come away.

If the pains are severe after the After-birth has come away, give 20 or 30 drops of Laudanum, or 1 or 2 tea-spoonfuls of Paregoric. No attempt should be made to move the patient or change her clothes for some minutes. Put a warm application or dry towel to the birth-place. After she has fully revived, change her clothing, and put dry articles beneath her. The greatest caution should be observed that she does not exert herself so as to cause the loss of blood. For two or three days after delivery, the patient should be kept perfectly quiet, see but little company, and be restricted to a plain diet. The bowels, if necessary, should be moved with some gentle Laxative, as Castor Oil. The milk generally comes on the third or fourth day, but may come on the second or even the fifth. At this time, there is generally some little Fever, Headache, Hot Skin, and Thirst. The Lochia, or Discharge, which a woman has for several days after the birth of the child, may be stopped; this

produces the slight fever; but when the milk comes on, this secretion is established.

Should the breasts become hard, they must be softened by the frequent application of Lard or Oil, gently rubbing them with the hands and by the application of flannel cloths, squeezed out of the Lard, as hot as can be borne. Draw the breasts frequently with the mouth, as the milk can be seldom drawn out by the child during the first week or ten days. An error is often committed, and much suffering is frequently caused, by attempting to force out the milk when the breasts are hard and caked, sore and painful, before they are softened by rubbing them with Warm Oil, as before described, or with fomentations of Hot Vinegar or Poultices.

In closing these remarks, I can not urge too strongly upon every midwife the great importance, during the time of labor, of keeping the woman calm and composed, and not to hurry Nature; by this course of conduct, a great variety of accidents may be prevented. Besides, women should be aware of the fact that hundreds of deaths and a long train of diseases are produced by too great haste, and not waiting patiently for the operations of Nature; her laws can not be infringed upon with impunity. A long experience in my profession, in the Obstetric Art, has convinced me that patience is the great remedy in childbirth.

DIRECTIONS FOR MIDWIVES.

THE directions which I shall give will impart such information as will enable a woman of good common sense and observation to manage almost any ordinary case of labor without the aid of a physician. Most of the accidents that occur during the course of labor, or childbirth, we believe, are produced by not giving Nature time to perform her operations. A midwife should remember, if she wishes to be considered skillful in her calling, never to force Nature, but to give her time to perform those operations; this will enable her to be successful in almost every case. It fortunately happens, that in those cases which terminate quickly, but little assistance is necessary; and thousands would pass safely through this ordeal of Nature, if they would but exercise patience and fortitude. A careful and experienced accoucher, or midwife, gives a woman confidence, relieves her of much anxiety, and thereby enhances her chance of going through her confinement safely.

When a woman is expecting to be confined, her arrangements as to her room should be attended to, as frequently, when the morning and evening winds are chilly and damp, a little fire may be necessary. A mattress is preferable to a feather bed, as feathers retain the heat and

perspirable matter; and, besides, sink down, rendering the patient uncomfortable in her position during her pains. The bed-clothes and clothing intended for this purpose should be well dried and aired, and if the weather is cold, warmed, and every thing in readiness, that there may be no delay when needed, or a change in them required. The bed should be well protected, to avoid a draught of air, and so arranged that every thing that is wet or soiled be removed, in order to avoid the disagreeable and unwholesome smell that would arise during the woman's confinement in a warm or close apartment.

Labor usually takes place about the end of the ninth month, or the thirty-ninth week of Pregnancy; which varies but little from four and a half months after Quickening, or the first perceptible motion of the fœtus, or child. It frequently happens that a woman is troubled with irregular pains, more or less severe, for a number of days, or even several weeks, previous to her confinement, which, from their not producing any effect toward expelling the child, are called False Pains. These pains are usually most troublesome during the night, and may be entirely absent during the day. They are often sharp and tedious to bear, coming on at irregular intervals, and do not bear down like efficient and expulsive contractions of the womb, nor are they attended with a discharge from the vagina or womb, as is usually the case in real labor. When the pains are suspected to be false, they may be relieved by warm Sudorific and Anodyne Drinks, such as Hop Tea, or Sage Tea, or Poppy Tea, or Camphor and a little Hot Water; or if these do not give relief, a tea-spoonful of Paregoric, or 20 or 30 drops of Laudanum may be given, which may be repeated, if it becomes necessary, in three or four hours. No danger need be apprehended from giving an Anodyne, for if the labor be actually beginning, it will often have a good effect in regulating the pains, and advancing the labor or childbirth.

When the pains come on at regular intervals, gradually increasing, called grinding pains, and attended with a bearing down sensation, a looseness of the bowels, frequent desire to make water, and a slight discharge or a moisture from the birth-place, it will be a strong evidence that true labor has commenced, however slow or feeble the pains may be at the commencement. The discharge called, medically, a "show," is often colored, and sometimes there is an appearance of fresh blood. Should the case prove tedious, or the pains feeble or irregular, bathe the feet in Hot Water, and give some Warm Tea, such as Tansy, Sage, Balm, Pennyroyal, etc., which will be followed by beneficial effects; the pains will now become more regular, and stronger. A dose of Castor Oil, or a clyster of Salt, Lard, and Water, by evacuating or purging the lower portion of the bowels,

adds greatly to the ease and celerity of the birth of the child, and ought never to be neglected when the bowels are not free. When it is desirable to increase the force of the pains, let the patient drink freely of Cold Water. I have often produced or increased the pains by this valuable, though perfectly simple and safe remedy. The Ergot or Spurred Rye is sometimes administered for this purpose, but it is an unsafe medicine, except in cases of a peculiar and difficult kind, and should not be given without the advice of a physician, as it will endanger the life of the child, and probably that of the woman.

The location of the pains is different in different cases, though the usual pain in the commencement of labor is in the lower part of the abdomen or belly, and extending round into the back and hips. In the last stage they are usually confined to the lower part or small of the back. When these pains continue hard in the lower part of the belly for a *long time*, and confined to this part alone, there may be reason to fear the case may be a tedious one, as in some instances the child rests upon the pubic bones for some time before it descends into the pelvis.

Treatment.— When you have ascertained that the actual labor is progressing, which is known by the symptoms I have before described to you, and by introducing your finger up the birthplace, well greased with Lard, which should be done with much care and tenderness, your nails being closely and smoothly pared, you will feel the mouth of the womb dilate or open during the time that each pain comes on, and the bladder or bag containing the waters. If the labor be not much advanced, you will feel the mouth of the womb, and its dilatation or opening more gradually at every pain.

The patient ought to be encouraged by cheerful conversation, and her mind kept occupied. Light nourishment should be given, as a cup of Tea or Cold Water. The pernicious and too prevalent custom of giving stimulants, such as Brandy, Whisky, etc., is to be avoided, except in cases of great prostration or weakness. The patient should, if convenient and comfortable to her, lie upon her left side. Some, however, prefer a different position. A practice which is often followed by midwives, which can not be too strongly condemned, and which is highly dangerous, is that of delivering a woman kneeling on the floor. As I have before told you, the best position is generally on the left side, the body and head being elevated by pillows. Such a position, however, need not be taken until the labor has advanced, and the pains have become frequent and severe; until which time, I allow my patient to sit up, or walk about, or take her pains in any position which she may prefer. The time for her being put to bed may be known by the change of the pains becoming longer, causing her to hold her breath, and to make bearing down efforts, showing fully that labor is coming to a close. Presently the membranes will

break and the water be discharged. Now place a pillow between her knees, and occasionally elevate or lift her upon her knees at each pain, for the purpose of affording free space. A towel, sheet, or some convenient article, should be tied to the bed-post, so that at each pain the woman may pull it, as it assists her very much in her efforts, and she derives great benefit and comfort from the support. The feet must be kept warm, as cold feet will often retard the progress and force of the pains.

When the last strong pains of labor are expelling the head of the child, as it advances, press the right hand steadily and firmly against the part between the fundament and birthplace, called by physicians *Perineum*, so as to give that part support, and prevent its rupturing or tearing; at the same time inclining the child's head to the pubes, which means the parts that form the arch in front. It is really important to attend to this matter, as by want of proper care, from hurrying the birth of the child, many serious accidents have occurred —the birthplace and fundament have become one opening from the tearing of the Perineum.

As soon as the head of the infant comes out, the midwife ought to pass her fingers carefully around its neck, to ascertain that it is free, as it sometimes happens, that the navel-string is twisted around the child's neck. Should this be the case, she must endeavor gently to slip it over the head, otherwise the neck may be so strongly compressed as to strangle the infant. At this period, the mouth and nose of the child, if there is any delay in the passage of the body, ought to be kept as free as possible from the discharges from the birthplace, as they may be drawn in by the infant in its efforts to breathe. Neither ought the body, or even the legs, of the infant, to be drawn from the mother too rapidly; their expulsion should be left to the natural efforts of the womb; for if too suddenly pulled away, the natural action of the womb becomes changed, and irregular contraction, accompanied by unnecessary pain and discharge, may be the consequence.

After the child is born, or expelled, if it should not cry immediately or breathe freely, it should be chafed upon the stomach with a flannel cloth; a little Cold Water, or Vinegar, or Spirits, should be sprinkled upon it, and occasionally a sudden gust of air blown upon it with the mouth or a fan, so as to resuscitate it. These means, if the child be alive, will generally revive it, and the breathing will be established; but should it remain apparently lifeless for some minutes, put it in Warm Water and rub it well, inflating the lungs by putting a quill or pipe-stem into one nostril, and then closing the nose and mouth so as to prevent the escape of the air through them, gently, until the lungs are filled. When the lungs are filled, the mouth and nose should be unclosed, and the air forced out by gentle pressure upon the chest and abdomen, or belly. This application may be done several times, and the motion of breathing be imitated by the pressure of the hand upon the belly of the child, giving it a rising and falling motion. By using this means, I have known many children that were apparently dead, resuscitated, or brought to life.

The new-born infant should be allowed to feel its new mode of life before that by which it previously existed is cut off; therefore, too much haste in tying the navel-string should be avoided. It ought to remain a few minutes before separating it from the mother, or until the cord ceases to beat. If separated too soon, it may produce injury to the child. The navel-cord must now be tied with a strong twisted cord, or thread, about as large as a knitting-needle, so that it will not break, as a string that is too fine is liable, when tied firmly, to cut the vessels and cause bleeding. It is necessary, particularly if the navel-string be large, to tie it very firmly, as the child may otherwise lose its life by the loss of blood, a circumstance that has frequently occurred within our knowledge. Tie the naval-string three fingers' breadth from the belly of the child. This leaves it long enough to tie again, should it be required. Then tie it again about two inches further from the first string, leaving a space between the two strings, and then divide the navel-cord with a sharp pair of scissors. The infant is now to be placed in flannel until washed and dressed. The child should be frequently examined, to ascertain whether it bleeds at the end of the cord; and if so, another string should be immediately tied to make it perfectly secure. As soon as the infant is separated from the mother, it is proper to ascertain, by the hand placed upon her belly, that there is not a twin child; if there be, the remaining bulk will indicate it in a way that can scarcely be mistaken. Should it prove so, the recurrence of the pain which is to effect the expulsion of the second child, must be quietly waited for. In most cases of twin children, the second is quickly and easily born, after the pains set in.

The child being taken away, as before directed, the After-birth should next be attended to. In a large proportion of cases, this will come away without assistance, in the course of ten or twenty minutes after the birth of the child. It will be proper, however, to take hold of the cord, and carefully ascertain if the Placenta or After-birth can be felt in the passage, and whether the woman is losing more blood than is natural at such times. If the After-birth can be felt in the passage, a few pains or a little gentle motion, or a very moderate pulling of the cord, will deliver it safely. When it remains high up in the belly, however, and especially if there be any unusual loss of blood, the action of the womb must be promoted by pressing and kneading the lower part of the bowels; by grasping and squeezing the womb gently in the hand, at the same time pulling very moderately, and moving the cord, so as to make the extension in different directions. Great care, however, is necessary in these cases, not to pull so hard as to break or separate the cord from the After-birth, or to bring down the womb, the latter of which accidents would be fatal, and the former, to say the least, would give a great deal of trouble. I have known cases where midwives and doctors have been in such great haste to get through with their labor as quick as possible, to pull the After-birth away so fast as to produce Flooding or serious difficulties, which may eventually, as it does in many instances, produce a Falling of the Womb. Every midwife, or physician, has, or

ought to have, sufficient experience to be aware of the danger of pulling away the After-birth, instead of waiting the regular efforts of Nature, and assisting her in her operations; that childbirth is a natural process, and that Nature is fully competent in all *ordinary* cases, and in *extraordinary* ones oftener than is usually imagined. In cases of excessive Flooding, whether the After-birth has come away or not, the woman should be placed upon her back, with her head and shoulders low; kept perfectly still, and Cold Vinegar, or Water, or Spirits, applied freely to the lower part of the bowels, and to the birthplace, or genital organs, by means of cotton or linen cloths, which must be frequently changed until the Flooding is stopped. If, under these circumstances, the After-birth be retained in the womb, the most skillful assistance ought to be obtained to deliver it safely.

The drinks, after the delivery, should be Cold Water, Toast Water, or Tea. If the patient should feel weak or faint, a little Camphor, or a few drops of Hartshorn, may be given in a little Cold Water.

If the pains, called After-pains, should continue severe, after the After-birth has come away, 20 or 30 drops of Laudanum or 1 or 2 tea-spoonfuls of Paregoric may be given, or a cup of Hop Tea, or Poppy Tea, or some other Anodyne, which will generally moderate the pain, and afford rest. No attempt should be made to move or change the clothes until the Flooding is done, particularly if the woman is faint or nervous. In changing her clothing and putting her to bed, whether there is Flooding or not, be cautious that she does not exert herself so as to bring it on. She ought, in no case, to be permitted to walk or stand upon her feet without being supported. After her delivery, she ought to be kept perfectly quiet for two or three days, see but little company, and use plain, unstimulating diet, and such kinds of food as are the easiest of digestion. If her bowels are costive on the third day after delivery, give a dose of Castor Oil or some gentle purgative; if the bowels are sufficiently open and the woman be comfortable, this will be unnecessary. Should the bowels be sore or painful, make a Liniment of an ounce of Gum Camphor dissolved in half a pint of Sweet Oil; rub the bowels with it, and apply, after rubbing, warm flannels. If the breasts are swelled, hard and painful, this Liniment will likewise be very beneficial in such cases. On the third or fourth day, and sometimes earlier, the milk generally comes; and if delayed to the fifth day, it is usually more or less accompanied with some little Fever, Headache, Hot Skin, and Thirst; and the countenance has a red appearance. Should the breasts become hard or swelled, they must be softened by frequent applications of Lard or Sweet Oil, or some Liniment, or by gently rubbing them with the hand with Lard or Oil, as hot as it can be borne. This usually affords instant relief. After rubbing them well, apply flannel, dipped in Lard or Oil, as hot as it can be borne. The milk should also be drawn occasionally with the mouth, or with a suitable instrument called a Breast Pump. When this proper course is taken, there is seldom any trouble with the breasts. A great error is frequently made, and produces much suffering, by attempting to force out the milk when the breasts are hard, sore and painful, before they

are softened by rubbing them well with Warm Lard or Oil, as I have before mentioned, or with Hot Vinegar or Poultices. Be careful, then, in the first place, not to allow them to get very full and hard, until they are softened; and never attempt to force out the milk with the Breast Pump or Pipe, until they are soft. It is in vain to make the attempt to force it until they are so, as you will only give your patient a great deal of unnecessary suffering. The Pump is a valuable instrument when judiciously used; but it is too powerful in the hands of those who do not understand how to use it properly.

The too common practice of confining a woman to her bed two or three weeks is unnecessary, as it debilitates her system, and frequently, instead of benefiting, does injury to the general health. The length of time, as to her confinement, depends much upon habit, as some women can do that which, in similar circumstances, others would suffer much from. If the confinement, or childbirth, has not been very severe, after the third or fourth day, allow her to sit a while on an easy chair, until her bed is aired and made up, particularly if it is warm weather; and by the fire, in a comfortable room, in winter. This will, from the change of position, afford her great comfort, and assist her much in regaining her strength. It may not, however, be proper to permit her to stand or walk much for a week or ten days after her confinement, particularly if she is weak, or has lost much blood, by which I mean Flooding, during her labor. I have, under ordinary circumstances, permitted women, whose habits have been regulated by an active life, to return, with care, after the tenth day, to their usual mode of domestic affairs, attending particularly at this time to the feet being well protected from cold and dampness, and the clothing sufficiently warm, allowing such food as may assist in affording a sufficiency of wholesome milk for the infant.

In regard to the bandage immediately after the delivery, it will always be found beneficial, if there has been an unusual loss of blood, attended with weakness, relaxation, etc. A moderately tight and well adjusted bandage is proper, and should be worn for a few days. The bandage should always feel comfortable and easy, as a tight one interferes more or less with respiration or breathing, by preventing a free and easy descent of the diaphragm, by limiting the action of the respiratory muscles, interrupting in some degree, the digestion, and the healthy motion of the intestines, by compressing the stomach and bowels. In every case, let the bandage be smooth and comfortable to the feelings of the patient.

The management of a new-born infant is a matter of great importance in the preservation of the life of the child. A few brief observations on this subject may be necessary. As soon as the infant is separated from the mother, by cutting the cord or navel-string, it should be wrapped in warm, dry flannel, so as to prevent it from taking any cold; then great pains should be taken to wash it clean, gently, and tenderly, with Warm Water and mild Soap, and particularly about the eyes, under the arms, and in the groins. If it is thickly covered with the white unctuous matter, which is often very

difficult to remove, you will, before washing, find it much easier to remove this by rubbing the infant over with fresh Lard or Sweet Oil The child should be as little exposed to the air as possible during this process, and wiped dry and wrapped up in a warm flannel cloth, as soon as possible, so as to prevent its taking cold.

In dressing the navel, draw the cord or navel-string through a folded cotton or linen rag, in which a hole is to be made of suitable size to admit the cord to pass through it; grease the hole well with Lard or Oil, so as to prevent the edges of the rag from excoriating it, or making it sore: then turn the end of the cord up, and place over it another fold of cotton or linen rag; put a bandage moderately tight around the child, in such a manner that it will keep the rags on the navel-string from slipping or being drawn up. Keep the bandage smooth and in its proper place, not by pins, but by sewing it with a needle and thread, and yet not so tight as to interfere with the breathing. It is frequently the case that the infant does not pass any water for several days after it is born; the cause is from a want of secretion by the kidneys. In such cases, a little Flax-seed Tea or Watermelon-seed Tea may be administered; and a thin bag of fine Salt made warm, and applied to the lower part of its belly, will assist the secretion by the kidneys. This occurrence, however, is not of much importance, as Nature generally remedies it in a few days.

AFTER-BIRTH.

THE AFTER-BIRTH, medically called the *Placenta*, is the substance which comes away from the mother after the birth of a child. It is an organized body, of a glandular appearance, circular form, about six inches in diameter, and as thick as the palm of the hand. Its office is to secrete blood from the womb of the mother, and to convey it to the blood-vessels of the fœtus. It is filled with arteries and veins, and in appearance resembles the spleen. The navel-string of the child, which is in general about half a yard in length, and as large round as the little finger, proceeds from the After-birth, and enters the belly of the child. The After-birth has two sets of blood-vessels; one takes the blood from the mother, and the other conveys it to her, and returns it from the child. The navel-string, funis, or cord, as it is variously called, contains two arteries and one vein. The vein conveys the blood from the mother to the child; and the two arteries convey the blood from the child back to the mother. These arteries beat in consonance with the beating of the child's heart The After-birth, during the growth of the child in the womb, adheres intimately to its substance; but after the child

is born, the After-birth separates and comes off with the membranes which enclosed the child before birth. These membranes, three in number, often adhere together in such a manner that they appear to be only one. They are called the *Amnion*, *Chorion*, and *Decidua*. The After-birth is convex on the side which adheres to the womb, and concave on the other. It commonly adheres to the fundus of the womb, although it may, and often does, adhere to almost every other part. It usually comes away from the mother in the course of half an hour after the child is born. In some instances, it is expelled at the same time with the child and the membranes which contain the child are broken. After the birth of the child, there is a short cessation of the pains, but they soon return and expel the After-birth.

AFTER-PAINS.

IN childbirth there are three distinct spells of pains—the first comes on to expel the child; the second to expel the After-birth, and the third to expel the clots of blood which accumulate in the womb after the expulsion of the After-birth, and to contract the organ to its natural size. The After-pains begin after the expulsion of the After-birth. In some cases these pains are very slight, especially with the first child. In other cases, they will be almost as hard as those which expel the child. They commonly cease after about twenty-four hours, but will sometimes continue for two or three days. If any part of the After-birth has been left, the pains may continue until it is expelled. The After-pains are commonly harmless, but when they are very severe, and prevent sleep, give 20 to 25 or 30 drops of Laudanum, which will regulate them. A tea-spoonful of Paregoric, or a plentiful drink of Hop Tea, or Poppy Tea, will answer the same purpose. Unless the pains are very severe, the Laudanum or Paregoric will be unnecessary.

After-pains are necessary and essential, and are caused by the efforts of the womb to attain that properly contracted condition on which the woman's safety depends. If they are very severe, it is generally owing to the presence of clotted blood, which must be expelled before they moderate. If these pains are moderate, by which is meant the usual severity, after the child is born, they are salutary, and should not be interfered with, with the exception of a hot flannel applied to the lower part of the belly, which will afford great comfort. After-pains are often kept up for some length of time by the bowels being

costive; in such cases, a table-spoonful of Castor Oil is a safe and effectual remedy. Too tight bandaging frequently aggravates the After-pains. If the confinement be a first one, the After-pains will scarcely give trouble. When they are severe, as I have before directed, 20 drops of Laudanum may be given in a little Water.

The discharges which often continue from the womb for some time, require that the birthplace, or private parts, should be externally cleansed with Warm Water, occasionally, and care should be taken to prevent her clothes from being wet. Perfect quietude is to be observed, light nourishment given, and the infant applied to the breast, whether it appears to contain milk or not. If Laudanum, Paregoric, or any other opiate has been given, and the bowels are confined, which is usually the case when such medicines have been used to allay pain, it will be proper, on the morning of the third day, to give a dose of Castor Oil. After the bowels have been moved, and the patient doing well, she may be allowed gradually a more nourishing diet; but stimulants should never be taken, unless for some special reason, such as great Debility or Weakness.

If the foregoing directions are attended to, there are few cases that will not progress regularly to a complete convalescence. Remember that during the whole of this time there is no greater comfort, or more salutary practice, than the free use of Tepid Water, so as to preserve the strictest cleanliness. In doing this, be always very careful that in employing these means you do not wet the bed or clothing of your patient. The great object to be kept in mind, in the management of Childbirth, is to have patience; never to hurry or force Nature; to encourage the mind of the patient by assuring her that the process, though a painful, is a natural one; and our Heavenly Father, who has ordered its marvelous arrangement and adaptations, will be present in the hour of travail.

SYMPTOMS OR SIGNS OF PREGNANCY.

CONCEPTION is succeeded by many important changes in the constitution, and generally by affections of various parts of the body, which are called Signs of Pregnancy, or that a woman hath conceived. These signs are: 1st. A cessation or suspension of the Menses. 2d. A certain derangement of the stomach, termed Morning Sickness. On first awaking, the woman feels as usual, but on standing upon her feet, a qualmishness or sickness comes over her, and shortly after

ward retching or vomiting takes place. Some women, however, do not suffer at all, or but very little, compared with others, who are sick from the time they conceive until they are delivered. 3d. In two or three months, certain changes may be noticed in the breasts; they swell and enlarge, with pricking and darting sensations, like those attending the commencement of Menstruation. Some women, however, breed so easily as to experience scarcely any kind of inconvenience whatever; while others, again, are perfectly incapable of retaining the least thing on their stomach, and are thereby reduced to a state of extreme weakness. With some women the vomiting will continue during the whole, or greater part, of the second stage of Pregnancy as well as the first; but it does not usually happen. Partial suppression of the urine or water, with a frequent inclination to void it; itching about the external parts of generation or privates; Costiveness, Tenesmus, and the Piles, are the complaints they are chiefly incommoded by during this period. Most women quicken about the sixteenth week after Conception, at which time the mother becomes sensible of the slightest efforts of the child; and besides the complaints just enumerated, she will then be liable to sudden unpleasant feelings, and slight hysteric affections. According to the commonly received opinion, Quickening, so termed, is generally understood to commence at the time when particular sensations are perceived by the mother, supposed to be occasioned by the first motion of the child. The most usual time of feeling any such symptom, is about the latter end of the fourth, or beginning of the fifth month of Pregnancy. At this period the uterus, or womb, filling up the pelvis, slips out and rises above the rim; and, from the sudden transition, women of delicate constitution and irritable fiber are apt to feel unpleasant, more particularly so if in an erect position. During the last three months, or third stage of Pregnancy, general uneasiness, restlessness (particularly at night), costiveness, swellings of the feet, ankles, and private parts, cramps in the legs and thighs, difficulty of retaining the urine or water for any length of time, varicose swellings of the veins of the belly and lower extremities, and the piles, usually prove most troublesome. In Pregnancy, the nipple becomes changed; the circle round it is of a brown or dark color. In those who have blue eyes, fair complexion, and light hair, this change does not appear until late in Pregnancy; but in those of dark hair, eyes, and complexion, the color of the nipple or circle, medically called *Areola*, becomes darkly colored. 4th. In the third month, but not before, the belly begins to enlarge or swell, and gradually increases in size until the full term of Pregnancy is completed. 5th. Between the sixteenth and twentieth week, the womb rises up into the belly,

and the motion of the child is felt, which is called Quickening. The first time a woman is with child, this sensation of Quickening is like that of a bird fluttering within her; at other times she feels a tickling or pushing sensation; or the child gives a kick or a jump, and this too with so much energy as to move the petticoats, a book, or any light article she may have in her lap.

It is of importance to remember the above symptoms, and the order in which they occur: 1st. Cessation of the Menses; 2d. Morning Sickness; 3d. Swelling and Darting Pains in the Breast, and dark color around the Nipples; 4th. Gradual Enlargement of the Abdomen or Belly; 5th. The Movements of the Child.

In *ninety-nine* cases out of a hundred, if these symptoms are present, the woman is pregnant. Pregnant women are generally afflicted with Heartburn, Sickness of a morning, Headache, and that troublesome disease, Toothache, which accompanies Pregnancy; all of which may usually be avoided by keeping the bowels gently open with Seidlitz Powders, Castor Oil, or Pills of Rhubarb, which should be taken occasionally, either alone or in combination with Colocynth and Soap. A Clyster made of warm Soapsuds will often be sufficient, if repeated every few days; or Senna and Manna; and if there is any aversion to taking medicine, give some simple articles, such as Roasted Apples, Figs, Prunes, or any thing that will quiet the stomach, and prevent costiveness of the bowels.

The Toothache, so often complained of by pregnant women, and which may occur at any period, is seldom relieved by extraction, having its seat in the adjacent nerves of the face or jaws, and is Neuralgic. The teeth ought not to be drawn during Pregnancy, unless urgently required, but should be relieved by applying Hot Fomentations to the face, as a Chamomile Poultice. Rubbing the jaw externally with Spirits of Camphor or Laudanum, or applying Mustard Plasters or Blisters behind the ears, will afford relief.

The cramps of the legs, etc., in Pregnancy, caused by the pressure of the enlarged womb on the nerves, are often troublesome, but not attended with any danger, and may be speedily relieved by a change of posture and friction, or rubbing with Opodeldoc, Spirits of Camphor, or hot Whisky and Salt. Palpitation of the Heart occurs frequently, and usually about the period of Quickening. In general, it is the result of a disordered stomach, and may be relieved by attention to diet, and moderate doses of Magnesia and Epsom Salts, of equal quantities. The Palpitation of the Heart may be produced by a morbid state of the nerves, and is then termed hysterical. Attention in all such cases should be paid to the diet, air, exercise, etc., with the view of improving the strength, the bowels being kept open

by mild means. All exciting or agitating subjects should be carefully avoided, and the mind of the pregnant woman kept calm and tranquil; for the mind, in the early stages of Pregnancy, exercises the most powerful influence over the child through life; and how many peculiar traits of character have been indelibly fixed upon their offspring from these exciting causes, are evident in many families. When the Palpitation occurs from the state of the nerves, as before described, producing uncomfortable feelings, a tea-spoonful of the Tincture of Castor or Asafetida, with an equal quantity of Compound Spirits of Lavender, mixed in a little Water, will seldom fail to afford relief, which may, if necessary, be repeated on its recurrence.

Morning Sickness is one of the most painful feelings attendant on the pregnant state, which medicine commonly fails to relieve. A cup of Chamomile or Peppermint Tea, taken when first waking, and suffering the patient to be still for an hour, will frequently alleviate the distressing sickness; but should it recur during the day, and if these means fail, two or three tea-spoonfuls of the following mixture should then be taken, either occasionally, or, when the Vomiting and Heartburn are more continual, immediately after every meal: Take of Calcined Magnesia, 1 dram; Distilled Water, 6 ounces; Aromatic Tincture of Ratanhy, 6 drams; Water of Pure Ammonia, 1 dram; mix.

The anxiety, and sometimes despondency of mind, in other words, lowness of spirits, to which pregnant women are more or less liable, greatly depends on the state of their general health and the natural temper and character of the individual; but it can be greatly aggravated, and may often be excited by circumstances, or officious persons. Let me, then, urge upon you *the important necessity* of keeping the mind as tranquil and cheerful as possible, particularly during the first four months of pregnancy; a judicious course of this kind will produce the most beneficial and well-balanced mind in the child; while, if the contrary, a desponding and nervous temperament, with many other peculiarities, will be the consequence.

Test for the Detection of Pregnancy.—M. Nauche has found that the urine of pregnant women contains a particular substance, which, when the urine is allowed to stand, separates and forms a pellicle on the surface. M. Eguiser, from an extensive series of observations, has confirmed the fact, and ascertained that *Kiesteine*, as this particular substance has been called, is constantly formed on the surface of the urine of women in a state of Pregnancy. The urine must be allowed to stand for from two to six days, when minute opaque bodies are observed to rise from the bottom to the surface of the fluid, where they gradually unite, and form a continuous layer over the surface. This layer is so consistent, that it may be almost lifted off

by raising it by one of its edges. This is the Kiesteine. It is whitish, opalescent, slightly granular, and can be compared to nothing better than the fatty substance which floats on the surface of soups, after they have been allowed to cool. When examined by the microscope, it has the aspect of a gelatinous mass, without determinate form; sometimes cubical-shaped crystals are discovered on it, but this appearance is only observed when it has stood a long time, and is to be regarded as foreign to it. The Kiesteine remains on the surface for several days; the urine then becomes turbid, and small opaque masses become detached from the Kiesteine, and fall to the bottom of the fluid, and the pellicle soon becomes destroyed. The essential character of the urine of Pregnancy, then, is the presence of Kiesteine. The characters of the pellicle are so peculiar, that it is impossible to mistake it for any thing else. A pellicle sometimes forms on the surface of the urine of patients laboring under Phthisis, Abscess, or Disease of the Bladder, but may be easily distinguished by this circumstance, that it does not form in such a short time as the Kiesteine, and that, in place of disappearing, as this last, in a few days, it increases in thickness, and at last is converted into a mass of moldiness. There exists, likewise, a very marked difference between its mucous aspect and that of Kiesteine; a difference which is difficult to describe, but which is easily recognized. Kiesteine appears to exist in the urine from the first month of Pregnancy till delivery. M. Rousseau has even recognized it in the urine of a few gravid animals.

VOMITING DURING PREGNANCY.

DURING the early months of Pregnancy, especially with the first child, it is important that very little medicine of any kind should be taken, and none except for urgent symptoms. For the Vomitings, Nausea, Heartburn, and other symptoms of Indigestion common in the early months, abridge the diet, use light food, such as Milk, Vegetables, etc. It is injudicious and hurtful to resort to Brandy, Opium and other drugs, as they only aggravate and protract the evil: but in general, a recumbent position, resumed for the Morning Sickness as soon as it occurs, and abstinence from food, for a few hours, with a full draught of Cold Water, will moderate this disorder, and in a short time it usually disappears. The bowels should be kept open by a tea-spoonful of Calcined Magnesia, occasionally, taken at night, followed by a glass of cool Lemonade.

MONTHLY SICKNESS, OR MENSES.

MONTHLY SICKNESS, medically called *Catamenia*, *Menses*, or *Menstruation*, is, in plain language, the Courses. Women, from the age of fourteen to forty-five, are subject to this discharge once a month. It is the usual order of nature, and essential to the reproduction of the human species. The blood discharged amounts to five or six ounces, and it continues from three to four days. The time of its appearance differs in different women, depending upon the constitution. Previous to the Monthly Sickness, pains are felt in the back and legs, and a kind of heavy feeling in the womb. Some women are very nervous and hysterical about this time; in others, from the change of blood, the face becomes flushed, accompanied by Headache and Dizziness. These symptoms, in a greater or less degree, usually attend the appearance of the new moon, and, in some instances, continue while it lasts. Excitement, both of the mind and body, have a powerful influence over a woman's Monthly Sickness. Some girls menstruate earlier than others; this is owing to the functions of the body, and their way of living. When girls take an active part in household affairs, and exercise in romping, playing, etc., the health, strength and energy are greatly improved, and the Menstrual function becomes more healthy and regular. When Menstruation does not come on at the proper time, or is obstructed in its course, after it has been once established, exercise, fresh air, change of scene, every thing which gives rest to the mind, and increases the circulation sufficiently to produce moderate perspiration, will greatly assist in restoring the natural Menstrual Discharge. The Menstrual effort is commonly preceded, in its first appearance, by a general uneasiness, pains in the back and hips, sickness at the stomach, and headache. In young persons, these entirely new sensations often produce great uneasiness, and should lead them to seek maternal counsel. The breasts enlarge, or become the seat of uneasy sensations, and sometimes pain; a fullness is felt in the head, with a slight throbbing pain in the temples, and sometimes giddiness or swimming of the head; also pain in the back, a sense of fatigue in the loins, and a weight felt in the lower part of the belly. In full habits, there may be a bleeding at the nose accompanying these disturbances of the usual health. The bosom becomes enlarged, and the whole form rapidly develops itself. After more or less of these sensations, in healthy females, a few drops of reddish-colored fluid, resembling blood, will escape from the womb, affording her immediate relief, even though the quantity be small, and though it may only continue

for a few hours. Her usual health now returns. In about four weeks a similar train of symptoms occurs again, attended by a longer flow of blood, and of longer continuance than before, which then becomes periodical or monthly, returning every four weeks, and is called the Menses or Courses. The establishment and regularity of this discharge in young females, is essential to their health. The period of life when it first appears is always a critical one, and calls for the care and attention of mothers.

From a variety of causes, the womb may fail to take on this its proper function, although the age has fully arrived at which it should be expected. It may happen, although the discharge may have commenced, or occurred once, that several months may elapse before it appears the second time. In such cases, if the female continues to enjoy uninterrupted good health in other respects, there is no reason for alarm or anxiety; nor should any interference with the course of Nature be adopted or permitted, for several months at least. so long as the general health remains good. But this Monthly Discharge being indispensable to health, at this period of life, can not be retained or suppressed for many months without impairing more or less the general health, and perhaps destroying the constitution. A retention of this discharge, or non-performance of the proper functions of the womb, often results, in young females, in a train of symptoms which generally ends in what is called

GREEN SICKNESS, OR CHLOROSIS.

WHEN this is the case, the girl becomes pale, or of a greenish pallor, and her face more or less bloated; she feels feeble, dull and drowsy; her stomach is out of order, accompanied by acidity, or sour belchings, flatulence or wind, occasional nausea or vomiting; palpitation of the heart; and finally the nervous system becomes deranged, often resulting in fits of melancholy. Her feet and ankles often become swollen, especially toward night, showing a tendency to Dropsy; her sleep is restless and disturbed; often craving unnatural food, as Clay, Chalk, and the like. The bowels are usually costive, sometimes attended with griping pains. If the derangement is allowed to continue, the lungs are apt to become affected, and the foundation for Consumption may be laid. Occasionally the face will become flushed, attended with pains and fullness in the head, pain in the back, and in the region of the womb. These symptoms, however, are indications that Nature is endeavoring to bring on the discharge, and should be assisted by proper remedies, as will be hereafter directed. Should the obstruction continue, the skin finally becomes of a dusky

yellowish-green color; the breathing short and hurried on the slightest effort, and great agitation is felt on the least alarm. The mind often becomes depressed, and other hysterical symptoms occcur, followed, perhaps, by a gradual wasting away of the flesh, terminating in Consumption, Dropsy, and Death.

Sometimes such cases, arising from a retention or suppression of the Menses, depend upon some original defect in the constitution, or some diseased condition of the body, organic or functional, which prevents the womb from performing its appropriate office; but, in most cases, exposure to cold, wet feet, damp air, check of perspiration, and the like, at an improper time — at the critical time when the Menses are in progress, or about to commence — will be found to be the prolific cause. For want of proper care or attention — often from ignorance — at these critical seasons, the Menses are suddenly stopped by getting the feet wet, or cold, or by taking a sudden cold in some other way, so that it frequently happens, when the next monthly period arrives, there is a complete suppression of the discharge; and, if neglected, the suppression may continue until the disease, known as Chlorosis, or Green Sickness, is fully established. This disease may be brought on at any time, even after the Menses or Courses have been established regularly for years. In such cases, it will usually be found to depend upon taking cold at an improper time, causing a stoppage of the discharge, and upon a want of proper treatment afterward. Thousands of lives are made wretched every year from ignorance or inattention to this important matter! Sometimes, perhaps, several months may pass, without any show or discharge, and yet the general health may not seem to be seriously affected; but invariably, after a longer or shorter time, if such obstructions are allowed to continue, they will result in great mischief to the constitution, and lay the foundation for incurable diseases.

As has been said, it generally occurs in young girls, and may be owing to an inability in Nature to fully develop or continue the Menstrual Discharge, or where, as is most commonly the case, no doubt, the girl has been neglected or improperly treated at this most critical time in her life. In cases of this kind, forcing medicines, that is, active Emmenagogues, will not do, as in cases of temporary or recent suppression; or at least they must be but secondary in the treatment, and either not used until after other remedies of a restorative and strengthening character are used, or else in conjunction with them. While the constitution and nervous system are greatly enfeebled, and the whole system of the female organs is out of order, there is, in nearly all cases, a deficiency of red blood in the circulation. Tonics, Restoratives and Chalybeates or Iron Preparations, are

the remedies indicated, with exercise, pure air, and due attention to the skin. Where it is practicable, traveling and change of scenery and associations, will be of great advantage. Free exercise in the open air, as riding on horseback, and daily ablution of the whole body with severe friction or rubbing, are of the utmost importance.

Treatment. — Ordinarily, where the Menses are regular and healthy, no medical treatment is necessary. It is a natural discharge, and needs no treatment. It is always necessary, however, to observe due caution against exposure and taking cold during the period of the discharge. It may often be well to make use of some proper and mild means to aid Nature in her work, such as bathing the feet in Warm Water, especially at night, on retiring, and drinking some warm Emmenagogue Teas, as Pennyroyal, Sage, Tansy, Ginger, or Composition. These will often aid and also guard against taking cold. It is sometimes the case, however, and especially with some women, that this natural and necessary discharge is far from being a trifling matter; but, on the contrary, is so painful and profuse that it is always looked forward to with the greatest dread.

As internal remedies, take the following: Tincture of Myrrh, Tincture of Aloes, Tincture of Blood Root, and Muriated Tincture of Iron, each, 1 ounce; mix, and take a tea-spoonful three times a day; also, pills composed as follows: Take Sulphate of Iron (powdered, and exposed to the air till it becomes dry and white,) 1 dram; Quinine and Gum Myrrh, each, 30 grains; Podophyllin, 20 grains; make into 60 pills, with Extract of Gentian, and take one pill night and morning. If you can not get the Podophyllin, take 60 grains of Aloes instead. Should the pills operate too much on the bowels, take but one a day; or omit them altogether for a few days at a time.

After using the above tinctures awhile, say two or three weeks, the following may be used instead, for the same length of time, and so in alternation: Take pulverized Gum Guaiac, 4 ounces; pulverized Allspice, 1 ounce; good Whisky, 1 pint; let stand and digest two weeks, shaking once or twice a day; then filter or strain, and add 2 drams of Iodide of Potassa, first dissolved in about 1 ounce of water. Dose: a tea-spoonful three times a day.

The following Restorative Bitters will also be found good: Take about 1 ounce, each, of Prickly Ash Bark, Wild Cherry-tree Bark, Seneca Snake Root and Spikenard Root, and ½ ounce, each, of Tansy, Chamomile Flowers, Allspice, and Socotrine Aloes; bruise all; cover with a pint of boiling water, and let stand over night; then put all into a bottle and add a quart of Holland Gin, or good Whisky. Dose: half a wine-glassful three times a day. This is especially useful in this and similar complaints. Pursue the course I have marked out, and, though it may require months, you will eventually succeed. When symptoms occur indicating the approach of the Menses, such as headache, lassitude, pain in the back and loins, etc., it will be proper to make use of means calculated to aid Nature, such as Warm Baths, Fomentations of Bitter Herbs, and Warm Diaphoretic and Emmenagogue Teas, as have already been named.

DYSMENORRHEA, OR PAINFUL MENSTRUATION,

IS simply what the name indicates—*Painful Menses*—often very profuse, sometimes flooding; severe bearing-down pains, like the pains of childbirth; and lasting, frequently, for several days. It is owing, undoubtedly, to a diseased action of the uterus or womb, and dependent, perhaps, upon various causes. In some females, it appears to be constitutional; for, in some families, all the females for successive generations have suffered more or less severely at their monthly periods.

Treatment.—In cases of this kind, treatment should be commenced before the menstrual discharge begins, or at least as soon as the premonitory symptoms are felt. The feet should be bathed in Warm Water, as hot as can be borne, and if the patient use the warm Hip Bath, at the same time, which may be done by sitting in a large wash-tub of water, as hot as can be borne, it will be all the better. Other means are to be employed to mitigate the pain and suffering during the attack. An active Cathartic should be taken, as soon as the first symptoms are felt. This should be the first thing done. The following recipe will answer the purpose well: Take pulverized Aloes and Gamboge, each, 30 grains; Podophyllin, 20 grains; Cayenne, 10 grains; make into 30 pills, with Mucilage of Gum Arabic or Extract Dandelion; and take three pills. These will generally operate speedily and thoroughly, while at the same time they exert a special and very beneficial effect upon the Uterus. After the pills have operated, to relieve the pains, in addition to the Foot and Hip Baths, apply Hot Fomentations of Bitter Herbs to the lower abdomen, such as Hops, Tansy, Catnip, Hoarhound, Boneset, Pennyroyal, Smartweed, and the like, or flannel cloths dipped in a hot decoction of the Herbs. If you can not get the Herbs, then use flannel cloths dipped in Hot Water, and applied as hot as can be borne. At the same time take of the following pills: Pulverized Camphor and Macrotin, each, 30 grains; Ipecac, Cayenne, and Opium, pulverized, each, 15 grains; make into 30 pills, with Extract of Hyoscyamus, and take one pill every two or three hours, or less frequent, according to symptoms. The following is also good: Take Tincture of Valerian, Tincture of Lupulin, and Sulphuric Ether, each, 1 ounce; Tincture of Camphor and Laudanum, each, ½ ounce. Dose: A tea-spoonful every hour or two, while the pains are severe. It may be taken in a little warm Chamomile or Pennyroyal Tea.

After the attack is over, and during the interval previous to the next expected period, such remedies are to be made use of as will be calculated to remove the difficulty or modify the severity of the succeeding attack. Some good Restorative Bitters should be used, in which there is a portion of Carbonate of Iron. The following will be found useful: Take Spikenard Root, Blue Cohosh Root, and Comfrey Root, each, 1 ounce; Blood Root, Sassafras Bark, Chamo-

mile Flowers, and Allspice, each, ½ ounce, and 1 Nutmeg; all to be either pulverized or reduced to a coarse powder. Then put into a vessel, and boiling water poured on, just sufficient to cover them, say not to exceed a pint; stir, cover, and let stand till cold; then put all into a bottle, and add 1 quart of Madeira Wine, and 2 ounces of Carbonate of Iron; let stand twenty-four hours, when it will be ready for use. Dose: from one to two table-spoonfuls three times a day. After it is a week old, it may be strained and pressed out. If you can get the Checkerberry (Partridgeberry), add an ounce or two of that, coarsely powdered, and it will still be better. At the same time take the following pills: Take Macrotin, 1 dram; Gum Camphor, Ipecac, and Quinine, each, 30 grains; make into 60 pills, with Extract of Hyoscyamus, just enough to form a pill mass, and take one pill twice a day, morning and night.

The bowels should be kept open and in a good condition, by occasionally taking a dose of some good Vegetable Cathartic Pills. The surface of the body should be bathed daily and rubbed well, so as to keep the skin in a healthy condition, for much will depend upon a free and healthy action of the perspiratory organs. The diet should be plain, nutritious, and of easy digestion. When the monthly period comes round again, make use of the means recommended for an attack of Painful Menstruation, more or less vigorously, according to the symptoms, and then pursue again the course here recommended, as intermediate treatment.

MENORRHAGIA.

IN cases of excessive or immoderate flow of the Menses, medically termed *Menorrhagia*, if you wish to check or modify the discharge, make use of the following

Treatment.—Take 20 grains of the Diaphoretic Powder, with about 10 grains or half as much Cayenne, and repeat the dose every two or three hours; at the same time drink freely of a Tea of Cinnamon Bark, or Cinnamon and Red Raspberry Leaves. An infusion or tea of equal parts of Beth Root, Blue Cohosh, and Star Root, half an ounce of the Compound to a pint of Boiling Water, is also good, and in bad cases one of the best remedies you can take. A pint of the infusion may be taken in the course of the day, using the Diaphoretic Powders and Cayenne at the same time. If you have not, or can not get the Diaphoretic Powders, take Ipecac, 10 grains; pulverized Opium, 5 grains; and Cayenne, 60 grains; mix well; divide into ten powders, and take one powder every two or three hours, as long as may seem to be necessary. To drink freely of the Composition Tea is also good. The object of using Cayenne is to stimulate the arterial system, and thus, while the Opium and Ipecac

act upon the skin and relax the capillaries or small blood-vessels, the Cayenne causes a determination of blood to the surface, thus relieving the pressure upon the uterus.

Comfrey Root boiled in Sweet Milk, and half a pint taken occasionally, is a good remedy to check the Menses, when too profuse. A powder composed of equal parts of Niter and Alum, say a tea-spoonful of each, divided into six equal powders, and one taken every two to four hours, is also recommended. A decoction of Blackberry Root is also good, or any of the Vegetable Astringents. Cold applications may be made to the lower abdomen and private parts, and in extreme cases, injections into the vagina of Cold Water, or a cold solution of Alum. But it is seldom that any such efficient measures are necessary, especially where the patient is in good health, or of a robust or plethoric habit.

AMENORRHEA.

THAT is, No Menorrhea, or Suppressed Menses. For all ordinary cases of suppressed Menses, I have never found anything better than a decoction of the common Vervine Root. This weed grows almost everywhere, and is very generally known by the country people.

Treatment. — Take a handful of the roots, cleanse well, bruise, and boil a few minutes in a quart of water. Let the patient take half a tea-cupful three or four times a day, commencing a few days before the time the Menses should come on. I have never known this remedy to fail. Or a strong Tincture or Bitters may be made of it, in Whisky or Gin, and taken in table-spoonful doses three or four times a day. If made into a tincture, other articles may be combined with it. The following is an excellent formula: Take Vervine Root, a good-sized handful, cleansed well and cut into small bits or bruised; Aloes, 1 ounce; Cinnamon and Allspice, each, ½ ounce; 1 Nutmeg powdered, and 2 drams of Saffron; good Whisky, 1 quart; let stand a few days, and then take a table-spoonful three or four times a day. This will be found an excellent remedy.

When the expected time arrives for the Menses to appear, and Nature seems to be making an effort to bring them on, which will be known by such symptoms as headache, pain in the back, loins, and limbs, weariness, pale countenance, with occasional flushes on the cheeks, irritable temper, capricious appetite, etc., additional means should immediately be made use of — such as bathing the feet and legs in Warm Water, sitting over the steam of Hot Water, or of Bitter Herbs, and drinking freely of Emmenagogue Teas, such as Pennyroyal, Ginger, Tansy and Rue; or of Composition Powder, with an equal quantity of Wild Ginger; and if the bowels are cos-

tive, a brisk and active Cathartic should be taken, composed of Aloes, Gamboge and Mayapple Root, or Podophyllin, such as is recommended in case of Dysmenorrhea. Oils of Savin and Tansy may be combined in equal proportions, and five to ten drops taken twice a day, beginning about a week or ten days previous to the time when the Menses should appear.

ABORTION.

ABORTION, OR MISCARRIAGE, means a woman losing her child previous to the seventh month of her Pregnancy; that is, before it is due time. When this occurs after that period, it is called Premature Labor. Miscarriage involves pain and weakness, in addition to the loss of offspring, and is often a severe trial to the maternal constitution. It may occur at any period of Pregnancy; but particular stages are more liable to the accident than others. These are generally considered to be about the time of the first Menstruation after conception; again at the twelfth week, and toward the seventh month; and the liability is increased at those times which correspond to the Menstrual period. When Abortion has once taken place, it is more likely to occur again. Some have so strong a tendency to it, that they never go beyond a certain stage, but then invariably miscarry. The cause of Abortion may exist in the constitution of the female herself, being the result of weakness and irritability, or of an overfull habit, or a diseased condition of the womb; or the fœtus, or child, may die, or be deficient in development, when it is cast off like a blighted fruit. Suckling, after conception has taken place, is not unfrequently a cause of Miscarriage. Active diseases, occurring during Pregnancy, such as Fevers, severe Inflammation, Eruptive Fevers, etc., are almost certain to occasion the expulsion of the uterine contents. Continued Diarrhea and the action of strong Purgative Medicines, particularly the Aloetic, are dangerous. This is a very good reason for those who are pregnant avoiding all quack aperient medicines; they almost all contain Aloes, and may be very injurious. All undue exertion or agitation of body or mind, sudden jerks or jumps, riding on horseback in the early stage, or in a shaking carriage, in the latter stages of Pregnancy, may any of them bring on a Miscarriage. To these may be added, exertion of the arms in doing any thing on a level above the head; costive bowels and straining consequent thereon; sexual indulgences, or too much connection with your husband, and luxuriant habits. Those who have once suf-

fered from Abortion, ought to be extremely careful during succeeding Pregnancies, and all ought to bear in mind the possibility of the occurrence.

The Symptoms of threatened Abortion vary with the constitution. In the strong and plethoric it is often preceded by shivering and febrile symptoms, and by a feeling of weight in the lower bowels. In the weak there is languor, faintness, flaccidity of the breasts, general depression, and pains in the back and loins. Intermittent pains, and discharge of blood from the passage, signify that the process has begun. If Miscarriage occurs within the first month or two after conception, the process may be accomplished with so little inconvenience as to escape notice, and be mistaken for a Menstrual period; more generally, however, the severity of pain, and an unusual clotted discharge of blood, render the case evident. The pain, the discharge, and at the same time the danger of an Abortion, are in proportion to the advancement of the Pregnancy. When a Miscarriage goes on, the pains increase in force and frequency, and continue with a discharge of blood, in fluid or clots, until the ovum, or first formation of the child, is expelled; after which both become moderated, until they cease altogether, the red flow giving place to a colorless one. It is very important that those in attendance upon the patient should examine every clot that comes away; if large, tear it in pieces, that they may ascertain whether the contents of the womb are expelled or not — for there is no safety or rest where Miscarriage is progressing, until it has taken place and every thing is cast off.

Treatment. — As soon as a female experiences threatenings of Abortion, she ought at once to retire to bed, upon a mattress, and keep perfectly quiet until every symptom has disappeared. Sometimes this simple measure, *promptly adopted*, is sufficient to avert the threatened evil. If there is much feeling of fullness, and the patient is of full habit generally, eight or a dozen Leeches may be applied to the lower part of the bowels; if there is fever, Saline medicines may be given, such as the common effervescing draught of Carbonate of Soda and Tartaric Acid, or Lemon-juice; or, if the bowels are much confined, Seidlitz Powders, assisting the action by Cold Clysters, if necessary. When the pains are severe, particularly in the weak and irritable, twenty or thirty drops of Laudanum should be given, and may be repeated in a few hours, if the symptoms are not improved. In the case of profuse discharge, the patient should be kept very lightly covered, movement avoided, and every article of food or drink given cold, or iced if possible, provided the vital powers are not excessively reduced; cloths dipped in cold, or Iced Water, should also be applied to the lower part of the body, and frequently changed; Acid Drinks, with Cream of Tartar, may be given freely. Ten or fifteen drops of Elixir Vitriol may be given, in a wine-glassful of

water, every two or three hours. Should slight faintness come on, it is better not to interfere with it, but use outward remedies, Camphor, Cold Water, Vinegar, etc., as they may be salutary. If it reaches to an extent to threaten life, Brandy and Water, or other stimulants must be used. Profuse and continued discharge, though it may not threaten life, must occasion a weakness which will take a long time to overcome, and which may ultimately, if not properly attended to, promote the development of other diseases of the womb.

If the Flooding is profuse, and uncontrolled by the means before mentioned, one and a half grains of Sugar of Lead may be given every two or three hours, and washed down with a drink of Vinegar and Water; to which, if there is much pain, add from five to ten drops of Laudanum. Pieces of linen or cotton cloth should be soaked in a strong solution of Alum, or a decoction of Oak Bark, and then well oiled; with this cloth plug the passage or birthplace, or some of this Astringent Wash may be thrown up with a syringe; but during the time, and after Miscarriage, the general strength must be supported by a strengthening diet, such as Soups, Meat, etc., avoiding stimulants as much as possible. Nevertheless, in some cases, Wine or Malt Liquors may be necessary in convalescence, or when recovering; if so, they may be assisted by tonic or strengthening medicines, such as contain Mineral Acid. Bark or Iron are generally given as the most appropriate remedies.

The bowels will, in some cases, require strict attention, as indeed they do throughout. For this purpose Castor Oil is a good medicine, or clysters of Cold Water, or Tepid Water, are most useful. A teaspoonful of Epsom Salts, dissolved in half a pint of Water, either cold or slightly warmed, to which add fifteen drops of Elixir Vitriol, forms a most excellent and mild purgative, which should be taken before breakfast. In all cases where the constitution of the woman has a tendency to Miscarriage or Abortion, a quiet state of mind should be observed, avoiding all violent exertions, particularly lifting heavy weights.

Three principles of treatment are to be kept in mind in the management of Miscarriage:

The first, to prevent it, if possible, by rest, opiates, etc.

The second, to allay pain, moderate the discharge of blood, and to save and support the strength of the patient.

The third, when Abortion must take place, to expedite the separation of the ovum, and free the contents of the womb. This is generally done by simply occasionally drinking cold water, and in difficult cases, if necessary, by the administration of the Spurred Rye. The dose is a strong infusion or tea given every twenty or thirty minutes, till the desired effect is produced, or as long as the stomach will bear it.

The health of pregnant females should at all times be an object of great care and interest; and they should be impressed with the conviction that, while bearing the first child, they may, by proper care and attention, lay the foundation for their future health and that of

their offspring; while by neglect and imprudence in this matter, they may not only enfeeble their constitution, but entail upon their children an inheritance of infirmity and disease.

Miscarriage, or Abortion, which includes all cases in which delivery takes place before the sixth month, seldom occurs without being preceded, or accompanied, or followed, by a morbid discharge of blood from the womb, which is commonly known by the name of Flooding. Abortion, or Miscarriage, takes place with the first pregnancy, and during the first two months; therefore, great care should be observed during this period, as any cause which either destroys the life of the child in the womb, or brings on morbid or premature contractions in that organ, may induce Miscarriage. Coughing severely, or vomiting, a blow or fall, or a misstep, leading to an effort to prevent falling, may and does frequently result in Miscarriage; and having once occurred, it is, without proper care, exceedingly liable to be the case at the same period of a subsequent Pregnancy. The same result may follow any vivid moral impression; for fright, or mental excitement by passion, or witnessing any accident, will be found often to end in Miscarriage. In some healthy females, however, it occurs without any other cause than mere fullness of blood. A bleeding from the womb is often in such cases a first symptom of Abortion, and should be attended to as early as possible before it goes to any considerable extent. The amount of Flooding, in most cases, is in proportion to the early period of Pregnancy at which it takes place, for in the latter month there is seldom much blood lost. But there are cases in which pregnant women will lose blood repeatedly from the womb and yet not miscarry, but these are very rare cases.

In most cases, the occurrence of Flooding between the first and fourth month, unless very slight, or quickly relieved, is usually followed by a Miscarriage; but as soon as the child and its membranes are both expelled by the contraction of the womb, then the Flooding soon ceases. In many such cases, it is often very difficult, and sometimes impossible, to deliver the After-birth and Membranes, which remain, and finally pass off after putrefaction has taken place, resulting in long and offensive discharges from the womb, and which, unless treated very skillfully, frequently result in many internal mischiefs of a serious character, such as Ulcers, Cancers, etc.

In all cases, those who are constitutionally disposed to Abortion, or have a tendency to Miscarriage, should take great care to preserve a quiet state of mind, and to avoid all violent exertion. All active purgatives should be avoided, and exposure to great heat or cold, during the time of Gestation or Pregnancy.

When the Miscarriage has really taken place, and the fœtus or child is expelled, together with the contents of the womb, the same precaution should in general be observed as in Childbirth.

To prevent Miscarriage when it is threatened, or on the appearance of the first symptoms, the patient should lie down and be as quiet as possible; live on very light diet; bowels be kept freely open; and an injection of thirty drops of Laudanum should be given in half a pint

of Slippery Elm Tea. Should Flooding be present, cold Lemonade should be drank freely, and cloths, wet with Cold or Ice-water, applied to the thighs and lower part of the belly and birthplace, which should be repeated until the Flooding is relieved.

MEANS OF PREVENTING ABORTION. — To prevent Abortion, women of a weak or relaxed habit should use solid food, avoiding great quantities of Tea, Coffee, or other weak or watery liquors. They should go soon to bed and rise early, and take frequent exercise, but avoid fatigue. They should occasionally take half a pint of the decoction of Lignum Vitæ; boiling an ounce of it in a quart of water five minutes. If of a full habit, they ought to use a spare diet, and chiefly of the vegetable kind, avoiding strong Liquors, and every thing that may tend to heat the body or increase the quantity of blood. When the symptoms appear, they should take a dram of Powdered Niter, in a cup of Water Gruel, every five or six hours. In both cases, the patient should sleep on a hard mattress, and be kept cool and quiet; the bowels should be kept regular by a pill of white Walnut Extract, or Bitter Root.

FLOODING.

AN excessive flow of the Monthly Discharge is called Flooding. Excessive discharges of the Menses may occur in various ways; may return too frequently; may flow too copiously, amounting to profuse bleeding from the womb, when not unfrequently clots will be mingled with this excessive flow or discharge; or they may come on at unusual periods, during Pregnancy and Suckling. Much, however, depends upon the constitution of the woman, and on climate — what would be natural Menstruation in one, would be profuse in another; and so in regard to climate — what would be profuse in a cold climate, would be only natural in a warm one.

There are three distinct forms under which this affection manifests itself, each of which has its acute and its chronic peculiarities. In the first form, the discharge is of the natural appearance and quality, but the quantity or frequency of its occurrence is greatly increased. In the second, the discharge is very considerable, and mixed with clots of blood. In the third, the loss of blood is sometimes very great, and attended with marked changes in the size and position of the womb — a circumstance which does not take place in the two former.

The first usually comes on with a sudden flow of blood from the womb; after a short time it stops for a few hours, or probably a day or two and then recurs again. It may come on and stop again, for a

number of days. Sometimes the discharge is regular in its return, but lasts twice or three times as long as it should remain on. In other cases, it is not usually large, but returns every two or three weeks, instead of coming on at the proper time or period of four weeks. This form of the disease, or menstrual discharge, often occurs in young and even married women, and is generally accompanied, during the intervals, with that troublesome complaint, the Whites, medically called *Leucorrhea*.

The second form of the disease differs from the first, in a larger amount of blood being discharged in a given time, and in the formation of clots, which are mixed with the natural flow or secretions. This does not usually take place with women who are under thirty years of age; but in women between thirty and forty, particularly those whose constitutions have been injured or weakened by Child-bearing or Diseases of the Womb. This complaint comes on gradually, one or two small clots appearing at first, which is probably but little noticed, and then in the next period appearing in much larger quantities. After continuing on in this way for some time, the loss of blood will probably increase, or become so great as to produce feelings of exhaustion or weakness, and not unfrequently fainting.

The third form in which this complaint exhibits itself, and which is much the most severe, is in women who are from forty to fifty, when the Menses or Courses are about to cease. The symptoms in such cases, both general and local, are much more severe than in the two former; the womb is more or less disordered in its structure and position, and the case is much more difficult. No woman, let her constitution be strong or weak, is exempt from it. It may attack the strong or plethoric, or the weak or debilitated, or the melancholic or the woman of sanguine temperament.

Some degree of irregularity of the Menses, either in time, quantity, or duration, and the Whites during the intervals, generally precede the attack.

Usually the natural discharge appears first, and continues about twenty or thirty hours before the clots of blood begin to be expelled. These clots are sometimes of a dark appearance, and of an offensive smell. The quantity of blood lost by some women is very great, producing extreme weakness, and not unfrequently causing serious alarm and apprehension from the quantity of blood discharged. The first attacks of Flooding in this manner generally last from six to ten days; but if the disease is of long standing, they may continue two, three, or even four weeks, almost without stopping. There is generally at this time a difficulty in passing the urine or water, the bowels are costive or bound, the appetite fails, the surface of the

body is pale, the whole system is feeble, and the general health suf fers severely. The patient may for a time improve, but any exertion or excitement, either of mind or body, may suddenly produce a relapse or return of the complaint.

The principal cause of this form of the disease, and the various changes produced in the system, is a congestion or overfullness of the blood-vessels of the womb.

The general symptoms, which are similar in all the forms of this disease, are great weakness, exhaustion, dragging and sinking, pain across the hips and loins, a dislike when sitting to rise up or to use any exertion, paleness of the face, headache, beating or throbbing of the temples, ringing in the ears, giddiness or swimming of the head, and frequently feverishness, irritability, and a deranged state of the stomach and bowels. In some women the nervous system is greatly affected, and the mind gloomy or depressed. In the more aggravated forms, there is much pain in the side, extending round the lower part of the belly; the headache is very severe; and the least noise or any unusual occurrence produces an effect on the nervous system, with feelings of great prostration, faintness, and change of countenance. Not unfrequently this disease is accompanied by swelling of the feet and legs, and Diarrhea.

The blood in this disease is altered and weakened; and this change or weakness predisposes to still greater Flooding. Among the causes producing an excessive flow of blood from the womb, are frequent and excessive indulgences, cold, over-exertion, mental emotions, frequent child-bearing, over-nursing, change of clothing from warm to cold, wet feet, atmospheric changes, overheated rooms, or exposure at the period of the Menstrual Discharge.

From these various causes is frequently produced a relaxation of the passage, and the consequence is often a Falling of the Womb, or Prolapsus, and not unfrequently Sterility, or Barrenness, and sometimes a predisposition to Abortion or Miscarriage.

Treatment.—In the cure of *Menorrhagia*, which means an immoderate flow of the Menses, the first step to be taken is, if possible, to remove the cause, for without this, success can not attend your efforts to cure it, however well directed.

During the continuance of the discharge of blood, particularly if it is severe, the woman should be kept perfectly quiet on the bed or mattress. The clothes should be light and loose; drinks cold, such as Lemonade, Cream of Tartar, or Tamarinds and Water, or Cold Water, or a few drops of Elixir Vitriol in a tumbler of Water. If the woman is of a weakly constitution, teas or infusions of Cinnamon, or any other spices, may be given with great benefit. As a domestic remedy, the Alum Whey will be found a valuable one. It

is made by dissolving a quarter of an ounce of Alum in a pint of Warm Milk; and the Whey may be taken at pleasure. A decoction of Logwood is likewise much used in such cases, and considered of great value. One of the most efficient remedies that can be given, and which will almost invariably arrest the flow, is Oil of Cinnamon, 1 dram, dissolved in Alcohol, 1 ounce, and taken in half tea-spoonful doses every ten minutes. Essence of Cinnamon, as obtained from the stores, may be substituted, in doses of a tea-spoonful. In severe attacks, cold applications should be freely applied to the lower part of the belly and privates, of Vinegar and Water, or Cold Water, or Whisky and Water, by means of cotton or linen rags steeped in them, and applied to those parts before mentioned, which rags should be changed, wet again, and applied as often as they become dry; this should be done until the discharge is checked. If these should fail in stopping it, and the woman has been married or had children, a strong solution or mixture of Alum and Water, or a decoction of Oak Bark, should be injected with a small female syringe, which can be bought at any drug store for a small sum. This solution or decoction should be injected up the birthplace or passage, and be repeated as often as it may be necessary; or you may use the following, which will answer the same purpose: Wet a wad of cotton or old linen, or a piece of sponge, with the mixture, and insert it or put it into the birthplace, and stop it well, so as to prevent the flowing of the blood. When this remedy is used, it may be permitted to remain during the day or night until the discharge ceases, or the woman is much relieved. I have found the applying a lump of Alum in the same manner near the mouth of the womb, to have a very fine effect, and in a short time check the Flooding. These remedies may at any time be withdrawn. Their use is not attended with the least danger.

The woman's strength should be always supported with light nutritious diet. During this period, occasionally, the moderate use of Port Wine will be of benefit to sustain her strength. A wine-glassful of Chamomile Tea, with ten drops of Elixir Vitriol, or the Tincture of Iron, which may be obtained at any drug store, given three times a day, will be found a most valuable tonic or strengthening medicine, and will contribute greatly to a permanent cure, with moderate exercise, riding in a carriage, change of climate, sea-air and sea-bathing, where convenient, and change of scene by traveling; for the mind has great influence in assisting the remedies before mentioned. When this disease, or Flooding, takes place in women of debilitated constitutions, in whom every portion of blood discharged more than the usual quantity, results in continual weakness and other diseases of debility, such persons ought always to resort to stimulants, or tonic medicines. In persons of full habit of body, where Flooding does not go to too great an extent, in such cases it may be allowed to go on as a salutary relief. When, however, it becomes so free as to act directly upon the strength, it should be immediately attended to. In the event of the case being a severe one, blood and clots being passed away in quantity, the remedies under the head of "Abortion" should be resorted to. Women of a full habit of body ought, in such

cases, to live on light, cooling diet, avoiding animal food altogether. Stimulants of all kinds should be avoided. Early rising, with active exercise, and the bowels being kept freely open with a tea-spoonful of Epsom Salts, taken every morning in half a pint of water, with, if necessary, ten to fifteen drops of Elixir Vitriol, will be found greatly to relieve these profuse attacks of Menstruation.

CHANGE OF LIFE.

THE decline of Menstruation usually occurs about thirty years after its first establishment; the time, however, varies in different women, depending entirely on the constitution, habits, etc. This period is, and always is, regarded by females themselves as a critical era in their lives. With the cessation of Menstruation, the capability of Conception also ceases. Such an important change can not take place without causing some constitutional disturbance. In some it is comparatively trifling; in others accompanied by affliction and illness; in some, from having lived a too luxurious life; perhaps, in others, from privation and over-work. Let this, however, be as it may, the health at this time should be carefully watched in all cases and any symptoms of disease at once attended to. As might be expected, irritations of the nervous system, hysterical and hypochondriacal, and a variety of other disorders, are apt to occur during this change of woman's life. In the fat or corpulent female, it is attended by plethora or overfullness of blood, causing Headache, Apoplexy, Spitting of Blood, Piles, etc. And, lastly, Cancerous Diseases of the Breast and Womb not unfrequently show themselves for the first time at the cessation of the Menstruation, or at this change of life.

In some, Menses may at first only be diminished in quantity and become irregular in their recurrence, gradually ceasing altogether, without constitutional disturbance; but such instances are rare: more frequently the flow is so scanty, that giddiness or pain in the head, dimness of the eyes, and a sense of fullness of blood, render it necessary to abstain from food, and take purgatives, so as to open the bowels freely. In such cases, the Epsom Salts are best, as they not only act as a purgative, but cool the whole system.

In other cases, the cessation is sudden, and after continuing thus for a few months, the discharge takes place so largely as to exhaust the strength, and require to be stopped by cold applications and astringents, as before mentioned. The compound Colocynth Pill,

which can be obtained at any drug store, may be safely used with great benefit in such cases.

FALLING OF THE WOMB.

THE Womb is medically called the *Uterus*. This most important organ is situated in the pelvis, between the bladder and the rectum. It is in the shape of a common pear, a little flattened. Its length is about three inches, the breadth in the middle is about two inches, and the mouth about one inch. The largest part is called medically the fundus; the middle, the belly; and the smallest, the cervix or neck. The fundus is the upper part. The cavity of the womb is small at the entrance, and gradually enlarges to the fundus or upper part, where it expands into a triangular chamber, out of which proceed the Fallopian tubes — two ducts, about three inches in length, which communicate with the ovaria. The internal surface of the womb is corrugated at the entrance, but smooth in the fundus or bottom. The womb is abundantly supplied with blood-vessels and nerves, and its walls always preserve the same thickness, both in pregnancy and in the virgin state. The Fallopian tubes terminate in a kind of fibrous fringe, called medically the *fimbriæ*, or fringe. The womb is suspended by strong ligaments from the brim of the pelvis; but these often become relaxed or weakened in consequence of general debility and local irritation, when a Falling of the Womb takes place.

The affections to which the womb is liable, originate more or less from Pregnancy, or some local constitutional inflammation, as Congestion of Blood, Enlargements, Tumors, and Polypus; and diseases of its neck, including Cancer, etc. It is also exposed to displacements from before or backward, or the reverse, and more frequently to a *falling down*, or as it is medically called, *Prolapsus Uteri*. The latter occurrence is the most usual after the time of Child-bearing is past, particularly in women who have borne large families, and especially in those who have neglected themselves, after their confinement, by getting up too soon. It is, therefore, a frequent complaint among poor women, who are often compelled from their circumstances to labor too soon. The Falling or Prolapsus of the Womb is permitted by a general laxity or weakness of the parts, but especially of the ligaments or elastic cords, which ought to retain it in its place.

Falling of the Womb is a disease very often originating from the Whites, and generally occurs in women of delicate constitution and

debilitated habits, although it may take place in the most healthy and plethoric. In its early stage it is accompanied only by a sense of bearing-down, with severe pain in the back, especially when standing or walking, which sensations are relieved by lying down. After a night's repose, the woman gets up in the morning quite well, but on the least exertion or walking, the pain and bearing-down again return, and the Whites make their appearance. Nervous and dyspeptic symptoms come on, with lowness of spirits, costiveness and difficulty of making water, or frequently arising in the night and discharging the urine in small quantities.

The Falling of the Womb, in some cases, arises from accident, as a fall, or straining in lifting; from tight lacing; fatigue in walking or riding; not unfrequently from distress of mind, and various other causes which affect the nervous system. I have known it to be frequently caused by dancing while tightly laced. When there is a Falling of the Womb, the pain is generally severe in the lower part of the stomach, back, and hips; and not unfrequently the bladder and bowels discharge, without power to control their contents.

If the Prolapsed Womb has fallen very low, so as to protrude externally, the woman becomes faint, and the nervous system is greatly affected. In Pregnancy, especially, the Falling of the Womb is often the result of permitting the bladder to become unduly extended or overfull, so that, by its weight, it presses the womb out of its place. I knew a case of this kind in a lady who was confined on the cars for several hours, there being no convenience or room appropriated for this purpose, which resulted in a distended bladder, so that the womb became seriously affected. The Diseases of the Womb may, of course, develop with greater or less rapidity; some are sudden in their onset, and urgent in their symptoms; others arise almost imperceptibly, and go on slowly. In most cases, however, there is a sense of uneasiness and dragging weight about the parts, perhaps actual pain of more or less severity. Under severe circumstances, discharges of blood or matter may take place. (See Menstruation, Whites, etc.) The constitution may sympathize more or less, and Irritability or Fever may arise, or obstinate Vomiting or Dyspepsia, with excessive Nervous Irritability and Hysteria.

Treatment. — When symptoms like the above described show themselves, or if there is much pain, and especially any feverishness, the woman should at once rest on the bed as much as possible, in a horizontal posture, with the hips elevated. If the pain increases, and especially the fever, Fomentations or Warm Bathing should be applied to the lower bowels and birthplace. When the suffering is great, give twenty or thirty drops of Laudanum in a little water, or give a Clyster, in which put a tea-spoonful of Laudanum. At the

same time always pay strict attention to regulating the bowels, so as to prevent their being costive or bound, by means of Castor Oil, or, in full habits, Salts and cooling Saline Medicines; but all preparations containing Aloes must, under all circumstances, be avoided. Clysters of Cold or Tepid Water are often useful. The diet must be regulated according to the habit and constitution of the woman.

If the womb has fallen very low, it may be necessary to replace it by pressing it gently with the finger, upward and backward; but in performing this operation, which should be done with much care, the finger must be well greased or oiled, and the pressure gradual. In some cases, however, though very seldom, the whole womb escapes from the body and protrudes between the thighs. To replace it at once may be difficult, as the inflammation and swelling may prevent it. In such instances, Leeches, Ice Water, and Warm Poultices may be applied until the pain and swelling subside, when it will be easy to replace the womb in its natural position by gentle efforts, made with the hands, previously greased or oiled, the woman being placed upon her back in bed, and the thighs being elevated. In such cases, the services of an experienced physician should be secured, as it may be necessary to empty the bladder by an instrument called a catheter, two or three times a day, and the bowels are to be attended to by injections. The woman, in such cases, should remain in bed for a week or more.

After the womb is replaced, great care should be taken for some time to prevent a relapse. If this disease has been of long continuance, or is apt, on walking or by any fatigue or exertion, to return, or come down, which is frequently the case, much benefit will be found by the use of cold injections up the birthplace, or bathing regularly with Cold Water. Females will most generally experience much comfort from wearing what is called an Abdominal Supporter, which consists of a bandage made of elastic materials, with springs, straps, and pads, fastening around the body, which gives great support to the womb, and prevents it from slipping or falling down. This supporter can be procured at any of the surgical instrument makers in our various cities. In the weakly and debilitated, this supporter, especially if properly fitted, will, under most circumstances, afford great relief, and should be obtained without delay.

In some affections of the womb, it becomes absolutely necessary for a medical man to resort to means of examination, which, though they can not fail to be highly repugnant to the feelings, no woman of truly delicate and pure mind would object to, when it has been fully explained to her by a professional attendant, in whom her confidence is placed, that such examination is positively required. It may have frequently occurred that these examinations have been unnecessary, or the physician been led, from his zeal in such cases, to disregard, perhaps, too much the feelings of women suffering from these peculiar diseases of the womb. It should, therefore, be the duty of every feeling and sensitive heart, in these delicate investigations, to exercise every tenderness which affection and modesty

require, remembering that their own dear mothers, and sisters, and daughters, may be liable to similar afflictions.

In all cases of Falling of the Womb, it will be proper and beneficial to make use of astringent injections up the birthplace, or vagina, by means of a female syringe. A decoction of Oak Bark, to be used cold, is a good injection; a little Alum may be dissolved in it. Use the injection twice a day. If the womb will not keep its place, after being properly replaced, a very good plan is to procure a small, fine sponge, of suitable size—about the size of a large hen's egg—which may be had at a drug store, and insert it up the vagina, for the neck of the womb to rest upon. A small cord or string should be firmly attached to the sponge, the end of which should hang out of the vagina, by which it may be drawn out once or twice a day, say every morning and evening, to be properly cleansed: always using cold injections freely of Oak Bark and Alum, or Cold Water, before inserting the sponge, each time. If the sponge prove to be too small, procure a larger one. There is an instrument made on purpose to support the womb, called a *Pessary*, either of glass, gutta-percha, or some other suitable material, which may generally be had of a physician, or at a drug store. It is also to be inserted in the vagina, for the womb to rest upon. But I prefer the sponge. Any woman can use it herself, in the way I have directed, and, with the additional use of proper astringent injections, thrown well up against and around the womb, she may, in a majority of cases, cure herself, without having to submit to the examination or assistance of a physician. If Inflammation of the Womb also exist, as is often the case, to some extent, make use of additional means, such as are recommended in "Inflammation of the Womb," as the case may seem to require.

One of the most valuable means of relieving the unpleasant symptoms that attend this displacement, and also of aiding the permanent cure, is the wearing of a properly made Perineal Supporter. Any woman who can properly fit a dress, can first make a bandage of strong drilling, eight inches wide, cut so as to accurately fit the hips and lower part of the abdomen, lacing up in front like a corset; putting in whalebone in front and behind to keep it from wrinkling; sew on buttons before and behind, six inches apart, to attach the perineal bands, which may be made of drilling, but good, strong elastic suspenders are better. Lace the bandage on, buttoning the suspenders on behind; bring them between the thighs, and button them sufficiently tight in front. Where they cross between the passages, sew on a pad half an inch thick, which will press up the Perineum, and give the needed support.

FOR TORPID BOWELS.

PERSONS who suffer from torpid bowels are often much relieved by the application of a Wet Compress over the stomach. This is an old remedy. You may apply a moist rag or towel, folded into four, to the surface, or a piece of moistened Spongio-piline. It matters not whether the water be cold, tepid, or warm. If applied cold, it soon becomes warm. Care must be taken that the Compress is not too wet. It may be worn for two or three hours daily, and in this way relief is often obtained without medicine.

INFLAMMATION OF THE WOMB.

INFLAMMATION OF THE WOMB will be known by a continuous burning pain in the region of that organ, with a sense of weight; and often darting, or shooting pains extending out toward the sides of the lower abdomen. Sometimes even the whole abdomen becomes exceedingly painful, and not unfrequently swollen, hot, and painful to the touch. The bowels are apt to become constipated; the urine suppressed or retained; the tongue dry and furred, and the pulse frequent and excited.

Inflammation of the Womb may be caused by severe protracted labor during confinement; by retention of the Placenta or After-birth; sudden check of the Lochial Discharge, or of the Menses; by external injuries; cold; the use of Pessaries; and by Falling of the Womb.

Treatment. — One of the first things to be done in Inflammation of the Womb is to evacuate the bowels, by means of cooling Hydragogue Cathartics. A brisk and active purgative should be given, composed of either the Anti-bilious Physic, a heaping tea-spoonful, with double the quantity of Cream of Tartar, or of Jalap and Cream of Tartar; or powdered Mandrake, or Mandrake and Jalap, equal parts, say a heaping tea-spoonful, with double as much Cream of Tartar; or about three grains of Podophyllin and the above quantity of Cream of Tartar. Or the physic may be given in half the quantities I have named, and repeated every hour until it operates thoroughly. Active Hydragogue Cathartics are of the utmost importance in this disease. If the bowels are much constipated, the action of the Cathartic should be aided, or at least the lower part of the bowel, or rectum, should be evacuated by means of repeated injections, such as Warm Water, with a little Salt and Lard in it, and a small portion of the Anti-bilious Physic; or any thing calculated to remove the hard fecal matter, before the Cathartic begins to operate. After the Cathartic has operated, give a dose of Castor Oil and Spirits of Turpentine; a table-spoonful of the former and a tea-spoonful of the latter.

Mustard Drafts, or Hot Fomentations of Bitter Herbs, should be applied to the lower abdomen, over the region of the Womb. It is a good plan first to apply a large Mustard Plaster, and after it has remained as long as it can be borne, remove, and in a short time apply Warm Fomentations. The common Smart-weed is an excellent article in this disease, or any inflammation of the abdominal viscera, as a fomentation, and should form a part of the ingredients; Hops, Smart-weed, Tansy, Hoarhound, and the like, should be boiled, and flannels dipped in the hot decoction applied as hot as can be borne, and renewed frequently. At the same time use the following injection into the vagina, with a female syringe: Take Chloride of

Lime, a heaping tea-spoonful, to a pint of Cold Water, dissolve, and use as an injection two or three times a day — several injections at a time. The quantity of the Chloride of Lime may be increased gradually, until double the quantity named be used. It may be had at the drug stores. This is an excellent injection in cases of Falling of the Womb, when there is more or less inflammation of that organ; first using the Lime injection a few days, to subdue the inflammation, and then the Oak Bark injection.

The bowels are to be kept loose by repeated doses of the Hydragogue Physic — any good, active, Vegetable Physic, with a tea-spoonful or two of Cream of Tartar — at least every second or third day; and as often as once a day a dose of Castor Oil and Turpentine should be taken, especially if the inflammation is severe; also continue the Fomentations.

If there is much general excitement, and fever, give occasionally, say every three hours, a dose (about ten grains) of the Diaphoretic Powder, or, if not that, of Dover's Powder; and if there be a retention of the urine, or it is high colored, the patient should drink freely of a tea of Marsh-mallow and Mullen; or of Watermelon or Pumpkin-seeds, and every hour or two, take a tea-spoonful of Sweet Spirits of Niter, in a little Spearmint Tea. If the patient can sit up, the Warm or Tepid Hip Bath, for half an hour at a time, will be found serviceable.

Should it be found that the Warm Fomentations, after trying them for a sufficient length of time, do not afford the desired relief, change to Cold Applications, by applying cloths dipped in Cold Water. I have known the happiest effects produced by the use of Cold Water applications, in such cases. Renew the applications every hour or oftener, or as often as they become hot and dry.

CHRONIC INFLAMMATION OF THE WOMB.

TREATMENT.—When Chronic Inflammation of the Womb exists, the Warm Hip Bath daily is recommended, and the constant use of the infusion or tea of the Marsh-mallow Root, as much as half a pint to be drank daily; Cold Water Injections, with a little Chloride of Lime dissolved in it — say an even tea-spoonful to a pint of water. At the same time take the following pills: Take Macrotin, 1 dram; pulverized Gum Camphor and Ipecac, each, 20 grains; make into 40 pills, with Extract of Dandelion or Mucilage of Gum Arabic, and take one pill night and morning. The bowels are to be kept in a lax condition by the occasional use of some good Cathartic Pills, or Castor Oil, with a little Turpentine.

NYMPHOMANIA.

THIS is simply an inordinate desire in the female for sexual intercourse, to such an extent that it becomes a disease. It is usually attended with more or less itching and burning pain of the external genital organs, and in the vagina, pain in the bladder, with strangury and retention of the urine, and sometimes fainting and hysterical fits. It may be owing to various causes, as too frequent indulgence in sexual intercourse; Gonorrhea, and consequent irritation of the genital organs; overheated voluptuous imagination; idle and luxurious mode of living; Worms; Masturbation, or Self-pollution, and the like.

Treatment.—The most approved remedies are light, vegetable, and cooling diet, and, if need be, fasting; cooling lotions, as solutions of Sugar of Lead, Camphor, and Zinc, and applications of Cold Water to the Genitals, and the free use of Camphor and Supercarbonate of Soda internally. Inject Cold Water frequently into the vagina. Bathe the external parts with a solution made of Sugar of Lead, 1 dram; powdered Camphor, 1 dram; Water, 1 pint. Take a pill, composed as follows: Gum Camphor, powdered, 2 drams; Ipecac, 30 grains; make into 60 pills, with Extract Hyoscyamus, and take one pill night and morning. Also take a tea-spoonful of Supercarbonate of Soda, in a little water, once or twice a day. Sleep on a hard bed, with light cover; avoid lascivious thoughts and books; engage in some useful and laborious employment, that will give free exercise to all parts of the body, and call off the mind to other objects.

MILK LEG—PHLEGMATIA DOLENS.

THIS disease consists of a swelling of one or both legs (usually but one), and generally occurs in women within a few days after Childbirth; or it may follow Abortion, or severe inflammation of the uterus or appendant organs. It usually commences with pain in the groin, attended with more or less fever, followed with swelling in the groin, which gradually extends into the thigh, and down the leg to the foot, which increases until, in a few days, the limb becomes, perhaps, double its natural size. The leg is smooth and hot; the skin tight, very sensitive, painful to the touch, and usually of a milky, or shining white color, attended with fever. The disease may begin to decline in two weeks, but sometimes it continues for five or six weeks, or even longer, causing great suffering and emaciation.

The direct cause of the disease is probably inflammation of the veins of the pelvis, extending to those of the extremity, which has been induced by injury to the parts in delivery, by neglect of proper treatment after delivery, or by Inflammation of the Womb, caused by retention of the Placenta, too sudden check of hemorrhage in Abortion, or, as no doubt is often the case, neglect to purge off the unhealthy matter and secretions soon after delivery. High living during the latter stages of Pregnancy, is said to be a favoring cause of the disease.

Treatment. — The treatment here should be commenced like that for Inflammation of the Womb, with an active Hydragogue Cathartic; or, if the stomach is irritable and out of order, give first an emetic of Ipecac and Lobelia, and in a few hours after that is done operating, give the Anti-bilious Physic, with Cream of Tartar, or powdered Mandrake and Jalap, or Podophyllin with Cream of Tartar, as directed for Inflammation of the Womb, and keep the bowels open by means of small doses of the same daily, or as often as necessary. Give also the Diaphoretic Powders, or Sudorific Tincture, three or four times a day, to act on the skin and promote perspiration.

The leg should be bathed with a solution of Salt, Vinegar, and Water, and occasionally steamed over Hot Herbs. Also use the following Liniment: Take Sweet Oil and Spirits of Camphor, each, 2 ounces; Creosote and Laudanum, each, 1 ounce; mix; shake well, and apply twice a day. The Salt and Vinegar is an excellent application, and should be used freely. I have also used Whisky, with a portion of Salt dissolved in it, with most excellent effect. A tea made of the Smart and May Weeds is excellent in all diseases of this kind, as a Sweating Tea, and may be drank freely. Horsemint may be combined with them, which will make it also diuretic.

The disease generally declines with copious sweating and discharge of urine, but goes off very slowly. It is sometimes the case that the swelling never entirely disappears, and there is often more or less stiffness in the limb for a long time.

CHRONIC FORM.

SHOULD the Milk Leg become *chronic* (that is, a portion of the swelling remain, giving the leg a rough, uneven appearance, terminating, as such cases generally do, in suppuration and running sores), the best treatment will be Fomentations of Bitter Herbs, and daily steaming the leg over a Hot Herb decoction; the application of Stimulating Liniments; poultices of Wheat Bran and powdered Elm Bark, made with a decoction of Smart Weed and Oak Bark, with powdered Gum Myrrh and Cayenne sprinkled on them, and dressing

the sores with Black Salve. A salve made by simmering May Weed, Yellow-dock Root, and bark of the Bittersweet Root, equal parts, in Mutton Tallow, is very good. The ulcers may also be washed with a decoction of Smart Weed.

NURSING SORE MOUTH.

THIS is a disease which sometimes affects women during the period of nursing, or suckling of the infant. It consists in a cankerous sore mouth; the cankers or sores having a whitish gray appearance. They appear on the inside of the mouth and cheeks, and sometimes the disease extends down the throat, even to the stomach and bowels. It is a disease of the mucous membrane, which lines the mouth, throat, and alimentary canal, and is mostly confined to mothers while nursing. The child is also generally affected with it. The disease resembles very much what is known as the *Thrush*. It sometimes appears during the latter months of Pregnancy; and I have known a few cases where it did not seem to have any connection with either Pregnancy or Nursing. In such instances, the disease has probably been caught from others, or has existed in the system a long while, and become constitutional.

CAUSES. — The disease is most probably owing to improper treatment during or immediately after confinement — impurities that should have been purged from the system, having been allowed to remain and become mixed with the blood and other fluids of the system.

Treatment.— The best remedy that I have ever found is the Iodide of Potassa, or Hydriodate of Potash, as it is sometimes called. Take two drams of it, put into a small glass bottle, and add four ounces of Rain Water. Take a tea-spoonful twice a day. This quantity will generally be sufficient to cure the case; but if it is not, a second bottle should be taken in the same way. Astringent and cleansing gargles should be used, such as recommended for Mercurial Sore Mouth, or Salivation; or a decoction of Bayberry Bark, Yellow Root, and Sumach Berries (or bark), with a little burnt Alum or Borax added. In case there is Diarrhea, as there will be if the disease extends to the stomach and bowels, the patient may also take two or three times a day a table-spoonful of this decoction, and once, in two or three days, a dose of Neutralizing Physic. If the patient is nursing, the child should be weaned, as it is almost impossible to effect a cure while it continues to nurse. If it has the disease also, the same remedies may be given it, in properly reduced quantities.

SORE BREASTS.

SORE NIPPLES are often caused by wearing a tight jacket, or by too tight a fitting dress. The mother should recollect that when nursing her infant her breasts are much larger than at other times, and also that the nipples, from constant nursing, are much more tender and easily irritated. Another and most common cause, is neglect to properly dry the nipples after the child has nursed.

Treatment.—The nipples should be well dried after each nursing, and a little Starch Powder, or powdered Magnesia, sprinkled on, or greased with a bit of Mutton Tallow. Should they, however, become sore, use an Ointment, made by simmering a little of the Bark of Bittersweet in Mutton Tallow. An Ointment made of Smart-weed, bruised and simmered in Mutton Tallow, is also one of the best for this purpose, and also for drying up the Milk—where that is desired—by applying it freely to the whole breast.

TO DRY UP THE MILK.

IF the above Ointment of Smart-weed is not sufficient, or is not convenient to get, one of the best things I have ever tried for this purpose, is a Camphorated Soap Liniment. Take, say, about 4 ounces of strong Tincture of Camphor, and add to it about two table-spoonfuls of soft Soap; shake well always before using, and apply to the breast three or four times a day. Or, take 4 ounces of Alcohol, and ½ ounce, each, of Gum Camphor and Castile Soap; mix, and apply in the same way.

INFLAMED BREASTS.

THE breasts of women are very often the seat of painful inflammation and swelling, which not unfrequently gather and break. Women are most usually subject to this distressing complaint during the first weeks of nursing. It is generally caused by taking cold in the breast, and by a stoppage or retention of the milk.

Treatment.—The best thing I have ever known to "scatter" the swelling and subdue the inflammation, if not gone too far, is the application of a Mink Skin. A fresh one is the best; but a dry one will do, by being softened in warm water. Apply it, or enough of it to cover the whole breast or mammary gland, with the flesh side next the breast, and continue to wear it there for some days, except when removed for the child to nurse, or to discharge the milk. It will sweat out the disease. It should be perfectly soft and pliant, and with the fur on.

An Ointment should also be applied occasionally, ma le by frying a little of the bark of Bittersweet Root and Jimson Leaves in some Lard.

If the swelling grows worse, and is likely to gather, a Poultice of powdered Slippery Elm, moistened with warm Lye Water, should be applied. When it has come to a head, so that you can see that matter has formed, it should be lanced; but it is always best to poultice and let it break of itself. After it is open, continue the poultice and wash the ulcer with the Tincture of Myrrh and Aloes, occasionally injecting some into the opening. A decoction of Wild Indigo and White Oak Bark is also very good as a wash. When the inflammation has been subdued by poulticing, heal with some good Salve.

AGUE IN THE BREAST.

THIS disease is sometimes called Weed in the Breast. This complaint, in its more ordinary form, has been noticed in another part of this work, under the head of "Inflamed Breasts." It may be well, however, to say something in addition on the subject. Ague in the Breast is an inflammation and induration of the mammary or milk glands, attended with redness, pain, swelling, and hardening of the gland, or some portion of it, often ending in suppuration, and sometimes in Scirrhus, or Cancer of the Breast — especially if improperly treated. Some women are much more liable to it than others. Suppression or retention of the milk is generally the cause of the difficulty, which may be induced by taking cold, sudden fright, or grief, or by the death of the infant, or its inability to suck, or any thing that will cause a retention of the milk.

Treatment. — The complaint is generally ushered in with rigors or chills, attended or followed with more or less fever. When such is the case — and indeed always, in the early stage — it is best to commence the treatment with an emetic (see Emetic Powders), and follow with a Cathartic, in an hour or two afterward.

Then, if you have, or can get the Tinctures of Smart-weed, Mayweed, and Chamomile Flowers, take equal parts, and give in teaspoonful doses every half hour or hour, till free perspiration is induced; if you can not get the tinctures, make a strong tea of those articles, especially the first two, if they can be had, and use it freely. Also bathe the breast with the same, and apply a plaster of finely powdered Camphor, mixed with a little Lard, over the whole breast — that is, the gland. If you can't procure those herbs, then take equal parts of Whisky and Vinegar, warm, saturate with Salt, as strong as you can make it, and bathe with that; wet a flannel with it, and apply as hot as can be borne; and at night put on the plaster

of Camphor and Lard. A little Scotch Snuff may be mixed into the plaster with advantage. A Liniment, composed as follows, is also very good: Take Sweet Oil, 4 ounces; dissolve in it ½ ounce of pulverized Camphor, and then add 1 ounce of Spirits of Turpentine, and ½ ounce of Creosote; shake well always, and bathe the breast with it two or three times a day. Give also the Diaphoretic Powders, in twenty grain doses, every three or four hours, to promote perspiration. If, however, you find that you can not, by any or all of these means, discuss or scatter the tumor, but that it must come to a head, then do what you can to hasten it, by poulticing with Elm Bark, moistened into a poultice with Warm Lye Water, or a poultice made of Flax-seed and a decoction of Hops; if a little old Honeycomb can be added to the poultice, it will be all the better. This will soon bring it to a head.

Do not lance it until it is almost ready to break, or until you can perceive the matter through the skin. Indeed, it is generally best to poultice it until it breaks itself; it will then not be apt to gather any more. If you do lance it, hold the edge of the lancet or instrument toward the nipple; you will then not be likely to sever any of the milk ducts. After the escape of the pus or matter, continue the poulticing, and wash out the ulcer with Tinctures of Aloes and Myrrh, occasionally injecting some into the opening, with a little syringe. If very painful, add one-third proportion of Laudanum to the Aloes and Myrrh. A decoction of Wild Indigo and White Oak Bark is also good to wash out the ulcer. When the inflammation has been subdued, and it has ceased to maturate, or there is little or no running, heal with the Black Salve, or other good Healing Salve. (For Cancer of the Breast, see chapter on "Cancer.")

PUERPERAL FEVER—CHILDBED FEVER.

THE Puerperal or Childbed Fever is a disease peculiar to women within a few days after delivery, and is generally considered a dangerous disease. It is usually of an inflammatory character, arising from inflammation of the womb, or of the peritoneum or lining membrane of the abdomen.

The usual symptoms are chilly sensations, succeeded by fever; headache; distention or swelling of the abdomen, with great sensitiveness and violent pain; suppression of the milk, and generally a suppression of the lochial discharge; nausea, sometimes vomiting; thirst; quick pulse; low spirits, and often delirium. Sometimes it assumes a Typhoid character, and is then still more dangerous. It usually appears about the third or fourth day after delivery.

The causes are protracted and difficult labor; the use of instru-

ments in delivery; confinement in a cold, damp room; and improper treatment after delivery.

Treatment. — Nine cases in every ten of Puerperal Fever might be avoided by giving the patient a thorough and active purge, of the proper kind, the next day, or about twenty-four hours after delivery. For this there is nothing better than a full dose of the Anti-bilious Physic, with Cream of Tartar; or a dose, say three grains, of Podophyllin, with a tea-spoonful or two of Cream of Tartar. This will carry off the unhealthy accumulations and secretions in the system, cool and thin the blood, and tend greatly to prevent the disease.

Where the disease has commenced, if there is much nausea and sickness at the stomach, give an Emetic (see Emetic Powders) — follow, as soon as the Emetic is over, with an active Hydragogue Physic — say 1 tea-spoonful of the Anti-bilious Physic, 1 grain of Podophyllin, and 2 tea-spoonfuls of Cream of Tartar. Repeat this in three hours, if the first dose does not operate.

Bathe the abdomen well with warm Alkaline or Saleratus Water. Soon as the physic has operated, give freely of warm Diaphoretic Tea, made of Ginger, Horsemint, and Smart-weed; and if you add the May-weed and Chamomile Flowers, it will be still better. The Sudorific Tincture should also be given with half as much Tincture of Blood Root added, in tea-spoonful doses once every hour or two, and apply ears of hot Boiled Corn or Hot Bricks, wrapped in cloths, about the person, in bed, all of which are calculated to get up and keep up a free perspiration. The Bitter Herb Fomentation to the abdomen will be of great service. Smart-weed and May-weed should compose a part; Hops will also be good; boil awhile, and add a pint of Soft Soap; then dip flannel cloths in the decoction, and apply them as hot as can be borne, and renew often. If the inflammation and soreness do not soon subside with this treatment, apply a poultice of Hops and Charcoal, and give plenty of Hop Yeast and Charcoal internally.

Keep the bowels loose by occasional small doses of Podophyllin and Cream of Tartar; an occasional dose of Castor Oil and Turpentine will also be good.

If the tongue is much coated, and the fever continues, make a powder of equal parts of powdered Blood Root, Blue Flag Root, and Niter, and give in doses of about fifteen grains every three hours. If there is delirium, apply Mustard Drafts to back of the neck, feet, and inside of the thighs. Whenever the skin becomes hot and dry, use the warm Alkaline or Saleratus Bath. Rely upon the Bitter Herb Fomentations with Soap, the tea of Smart-weed, May-weed, and Chamomile, and use a Liniment to the abdomen, composed of Alcohol, 4 ounces; Camphor Gum and Niter, pulverized, each, ½ ounce; Oil Hemlock and Spirits of Turpentine, each, 1 ounce; to be applied two or three times a day. Pursue this course vigorously, and you will cure ninety-nine cases in every hundred.

MILIARY FEVER.

THIS is a sort of eruptive Fever, of rare occurrence, however, and as it is almost exclusively confined to women during the period of childbed, it may be regarded as a form of Childbed Fever. The principal cause of the disease seems to be exposure to too great a degree of heat during confinement, as in an overheated room, or too much hot and stimulating medicine. It is also more apt to attack those who are weakened by great fatigue, excessive evacuations, or hemorrhages, and other debilitating causes.

The eruption usually appears first on the breast, neck, upper part of the back, and gradually extends downward. The eruption consists of small red pimples, about the size of millet or cabbage-seed. Previous to the appearance of the eruption, the symptoms are usually slight chills; feeble, quick pulse; extreme weakness; anxiety; restlessness; sickness at the stomach; dryness of the mouth; white fur on the tongue; costive bowels; and hot, dry skin. These symptoms continue for two or three days, with dejection of spirits, sighing, and great despondency, and are succeeded by the breaking out of a peculiar sour-smelling sweat, which is soon followed by a burning, pricking sensation in the skin; then the eruption, a sort of rash, first, as I have remarked, appears about the breast and neck, and gradually extending to other parts of the body. About the seventh day, the eruptions usually become dry, and the skin peels off in scales. Sometimes, however, a new crop of pimples will appear, and even several successive crops, so that in such cases the disease may continue for several weeks. The disease is seldom dangerous; but a sudden disappearance or recession of the eruption, with great anxiety, dejection, weak and rapid pulse, and vomiting, are unfavorable symptoms.

Treatment.—The treatment in this disease should be very similar to that for Measles and other eruptive diseases. Keep the bowels loose with mild Cathartics. If the stomach appears to be much deranged, give an Emetic. The room must be kept well ventilated and clean, the clothing and covering light, the body bathed frequently with warm Saleratus Water, and the patient take plenty of cooling Diaphoretic Teas, such as Elder Flowers, Catnip, Saffron, and Sage; and if much restlessness, a dose of Diaphoretic or Dover's Powder at night. The patient may also take Lemonade occasionally, or Water made pleasantly acid with Cream of Tartar, as a cooling drink. Care must be taken not to let the patient take cold, so as to cause the eruption to recede or go in. Should that happen, the Warm Bath should be used, and plenty of warm Diaphoretic Teas given, such as the Composition Powder, Elder Flowers, and Saffron, and a decoction or tincture of the Black Cohosh Root. If the decoction is

used, half a teacupful may be taken every two or three hours ; if the tincture, a tea-spoonful every hour or two, in a little warm Herb Tea. In making the decoction, a little Sassafras Bark may be added. Mild treatment, cleanliness, pure air, light diet, and let the disease run its course, is the proper plan to pursue — being very careful to guard against taking sudden cold.

Should the fever become very severe, give the Diaphoretic or Dover's Powders, in ten grain doses, every three or four hours, with a grain of Quinine in each dose. Should ulceration of the mouth take place, make use of proper gargles, such as recommended for Ulcerated Sore Mouth, or treat as recommended for Nursing Sore Mouth.

THE WHITES—LEUCORRHEA.

THE Whites, medically called *Fluor Albus* or *Leucorrhea*, is a discharge from the womb or vagina, and is of a whitish fluid, resembling the white of an egg, which is sometimes thin and at others thick, and not unfrequently of a yellow color. This disease is occasioned by a chronic sub-acute inflammation of the internal surface of the womb, which is in a sore red state. This extremely common and troublesome female complaint may and does occur in a variety of constitutional conditions and circumstances, but more generally it is associated with general debility, or weakness, and almost certainly so if it has continued profuse for any length of time. This discharge, which is so common among married women, ought not, *as it is too often the case*, to be neglected, for not only may the constitution and general health and strength be seriously injured, but not unfrequently the most serious diseases of the womb occur from such neglect.

Of all the diseases peculiar to women, this disease, the Whites, is the most common and troublesome ; but few married women escape its attacks. It should be remembered that this disease is often the result of neglect, and that in the milder discharges of the complaint, a little attention and domestic management will often be sufficient to remove this unpleasant disease. If allowed to go on, as before mentioned, either from mistaken delicacy or carelessness, it may end by undermining the powers of the constitution, and Dropsy, Consumption, and other diseases of debility may originate in consequence. In some women, the Whites is so mild, that it is often neglected or permitted to run on, until it produces great weakness and seriously impairs the health, though it might have been removed by cleanli-

ness and early attention. This neglect is frequently the cause of inflammations of the womb, permanently fixing this troublesome complaint, Leucorrhea or Whites.

In those of plethoric habit, by which is meant fat or fleshy women, especially in the middle periods of life, the inflammatory symptoms may be of greater severity, requiring more attention to soothe the internal parts by the use of Tepid Water or Cold Salt-Water, Hip Baths, etc. The bowels in all such cases require strict attention, and should be regulated by the cooling purgatives, such as Epsom Salts, Seidlitz Powders, etc., or by Cold Water Clysters. It must, however, be borne in mind, that, in all cases, the strictest cleanliness must be observed, by bathing in Cold Water; indeed, in this disease, the Whites, it is absolutely requisite, both as a prevention and cure. The neglect of cleanliness is one of the most frequent causes of this complaint. This disease generally makes its appearance just before, or after the Monthly Sickness, and women who are subject to a large flow of the Menses, are more apt to be afflicted with the Whites. In many this discharge is constant; in others, at times. When this disease is of long standing, it not only produces great weakness, but it likewise disorders the nervous and digestive systems. Dyspeptic symptoms are almost sure to follow, to a greater or less extent, when the disease is severe. The skin becomes pale; there is a darkness under the eyes, similar to that when a woman has her Monthly Sickness; also a want of muscular energy, and frequently pain in the back and loins, and a general delicacy of health, gradually undermining the constitution.

Leucorrhea, or Whites, often follows from inflammation of the mucous membrane of the vagina and uterus, but more frequently, perhaps, from debility and weakness. It may, therefore, be produced by any causes that give rise to inflammatory action, or to general prostration. Among these may be enumerated deranged menstruation, cold, want of exercise and fresh air, late hours, exciting reading, company, and conversation, depression of spirits, vicious habits, too early or too late marriage, exciting food and drink, stimulants, excitements or excesses in venery, exposure to cold, damp weather, thin shoes, injury at childbirth, hard labors, thin clothing, and every thing that weakens or debilitates the system. All large cities are the principal places to engender this and other female diseases. In the female, puberty is precociously developed, or she is a woman before her time, for exciting circumstances abound; and the daily habits of women, or, in truth, girls, are calculated to make them weak, and susceptible of cold from the slightest exposure, inducing a variety of other diseases.

In some persons, the Whites appear to be constitutional, and no doubt results in many instances from a Scrofulous taint. Certain temperaments are also apparently more disposed to it than others, particularly those of a nervous habit, light or reddish hair, a thin transparent skin, and who swell and puff up in the limbs from any slight exertion. The intimate connection between the uterine system and the great nervous centers, is also another source of this disease; hence it is often produced by sudden fright, continued anxiety, disappointment, grief and passion. In short, every thing that deranges, weakens, and diseases other parts of the system, will thus disease the womb, whose mysterious and extensive sympathies connect with every other organ in the body. The importance of these remarks may be imagined, when I state that the occurrence of this disease in its aggravated form, and the occasional consequences it then gives rise to, have been the means of raising unfounded suspicions of moral impurity, and of creating discord where it ought not to exist. Never ought such ideas to be entertained for one moment in the mind, still less given in words, except when based upon the careful examinations and opinions of more than one medical man. It may sometimes be mistaken for the Gonorrhea, the precise nature of this fluid being in many instances so similar, when of long standing, being very acid, or of a yellow color, as to deceive, in some instances, even the physician. The other disease, however, is a more inflammatory one, attended with more heat, scalding, and soreness in passing the urine or water, and the discharges of a very yellow color.

As long as the Whites continues, the ordinary function of Menstruation is more or less deranged; it is likewise symptomatic of disease connected with the womb, and Miscarriage is more liable to occur. Falling of the Womb is also often produced from the Whites, and so generally accompanying it that it may be proper to name it here. Moreover, when family is desired, the wish is not likely to be accomplished as long as the discharge continues, because when this disease becomes habitual or well established, the womb gradually loses its powers of contraction and strength, the semen or fluid being discharged immediately in combination with this flow of vitiated mucus, the Whites. As before stated, it is associated with general debility, and almost certain to destroy the general health, if it continues profuse for any length of time; but it may be quickly removed by rest, cleanliness, diet, bathing in cold water, and mild saline purgatives, such as Epsom Salts and Seidlitz Powders, occasionally taken, and by injections, with a syringe, up the birthplace, with Cold or Tepid Water, and in following the remedies hereafter named.

Treatment. — The first is cleanliness, by bathing freely with cold

or tepid water, and injecting it up the birthplace three or four times a day with a female syringe, which can be purchased at any drug store. The glass syringe is preferable.

In all cases the regulation of the diet will often produce a great improvement of the general health. Where the woman is of a full or plethoric habit, the food should be vegetables, or a light and nutritious diet; for the weak or debilitated, more stimulating, such as Animal Food, Port Wine, Malt Liquors, or such tonics as strengthen the system generally. Due attention, in all cases, should be given to rest, or gentle exercise, regular hours of sleep, and nothing done to exhaust or lessen the strength. Warm Bathing or Cold, as it may be adapted to the constitution. The Shower Bath, used every morning, and the body well rubbed, immediately after, with a coarse towel, and a preparation of Rhubarb and Iron, given internally, in most cases, will check this disease very quick, and restore the general health, in very delicate females.

I have used an injection of Green Tea with much benefit, which may be substituted for the simple water, either cold or tepid, which ever appears to be most beneficial. Injection of Sugar of Lead forms one of the most cooling and astringent injections in this disease, in the commencement of the discharge, and should be injected two, or three, or four times a day; this remedy will, in mild cases, be attended with much benefit, and in those of plethoric or full habit, this injection, with a dose of Salts occasionally, combined with the Bath, will be found very beneficial. The proportion of the injection is from 5 to 8 grains of Sugar of Lead, medically called *Aceti Plumbi*, to three or four table-spoonfuls of Rain Water; or an injection made with 5 or 6 grains of White Vitriol, medically called *Sulphate of Zinc*, to the same quantity of Rain or Soft Water; or an Alum wash in similar proportions to the last, or a decoction of Oak Bark, or the Green Tea, as before mentioned, or a strong tea of Nut Galls; either one of these astringent articles, used as an injection, four or five times a day, will, if used regularly, remove the discharge, which few women, particularly if they are married, or mothers, escape completely, for, of all the diseases peculiar to the sex, there is none so common as the Whites.

In this disease I have frequently prescribed a gentle Emetic of Ipecacuanha every three or four days, and in many obstinate cases have found it to be of much service.

Thirty or forty drops of Balsam of Copaiva, three times a day, or twenty or thirty drops of the Spirits of Turpentine, taken on Sugar, will be found an excellent medicine in this complaint; or a tea-spoonful of pulverized Cubebs in a tumbler of water twice a day, is likewise a good remedy. Either of those articles can be tried alternately, as they may be beneficial or afford relief.

The Precipitated Carbonate of Iron and Extract of Cicuta, taken in the proportion of twenty grains of the Iron to one of the Cicuta, twice a day, for a length of time, will both strengthen the tone of the system, and allay the irritability of the uterus or womb.

Six grains of the Dover's Powders, taken twice a day, night and

morning, is one of the most valuable remedies to restore the proper action of the uterine vessels.

Griffith's Mixture, which can be obtained at any drug store, is an excellent medicine for the Whites. The Sweet Spirits of Niter and Hoffman's Anodyne Liquor are often of great benefit, in the dose of a tea-spoonful.

When the discharge is so acrid as to create pain, and a scalding heat in making water, the following is one of the most valuable remedies, and never fails to afford immediate relief: Take of Sweet Spirits of Niter, 1 ounce; Balsam Copaiva, ½ ounce; Sweet Almond Oil, 1 ounce; Spirits of Turpentine, ½ ounce; Pulverized Camphor, 10 grains; put into a four-ounce vial, and shake up well for a few minutes, and it is ready for use. Dose: one tea-spoonful in a wine-glassful of Slippery Elm Tea, made by pouring boiling water on the Slippery Elm Bark, and let it soak well until it becomes a mucilage, or thick, like syrup. In Inflammation of the Kidneys, medically called *Nephritis*, this will be found a most useful remedy.

Where there is much weakness, the patient must keep still; in fact, she must have perfect rest; defend the feet well from dampness, and use a generous diet and tonics to strengthen the system, such as the Muriated Tincture of Iron. Dose: from twenty to twenty-five drops in half a tumbler of cold water three or four times a day. Or, take a little good Port Wine and Peruvian Bark, and an injection made as follows: Make a strong decoction or tea of Poppy-heads, and to a pint of this decoction or strong tea, add one ounce of Borax. This is an excellent injection. The Oak Bark is also a valuable injection, as mentioned before. They should be used tepid, which means pleasantly warm. Port Wine makes a good injection — two parts of Port Wine to one of Soft or Rain Water. The bowels should be kept gently open by the use of Rochelle Powders, or Extract of Butternut or Aloes; or Seidlitz Powders, or small doses of Epsom Salts. Where there is much general weakness, the strength must be restored by the use of Quinine, Wine, the Mineral Acids, and the preparations of Iron, or such springs of water as contain Iron, which should be used whenever it is practicable to visit them.

Plasters, called strengthening plasters, made of Pitch or Galbanum, or ask at any drug store for the Poor Man's Plaster, that which is spread on leather is preferable, and apply either of these plasters, which should be warmed so as to make it stick well to the small of the back, which strengthens and is very useful in this disease. I shall now give you my practice in this troublesome and almost general disease among women, which is produced by debility, particularly of the uterine organs, or womb, such as exposure to cold, damp, fatigue, excessive venery, abortions, pregnancy, or any thing that weakens the womb. When in Paris, I obtained a remedy, which I have used in hundreds of cases successfully: Tincture of Aloes, 1 ounce; Muriated Tincture of Iron, 2 drams; mix. The dose is from thirty to forty drops three times a day in a little water. Inject up the birthplace, with a female syringe, the following wash, twice a

day: Sugar of Lead, 1 dram; White Vitriol, 1 dram; put both these into 1 pint of Rain Water, shake up well, and use as directed.

Another valuable medicine, which in many cases will relieve, is the pill, made at any drug store, as follows: Alcoholic Extract of Cubebs, 1 part; Solidified Copaiva, 2 parts; mix well together, and make in three or four grain pills. One or two of these are to be taken two or three times a day until relieved, or as they may agree with the stomach; but, as some persons dislike to take pills, the following remedies may be used instead: Commence by taking a gentle purgative, then use Cold or Tepid Water injections, after which the following medicines should be taken: Balsam Copaiva, 1 part; Sweet Spirits of Niter, 2 parts; Spirits of Turpentine, 1 part; Tincture of Kino, 1 part: these four articles above mentioned are to be mixed together and shaken up well. Dose: thirty drops in a wine-glassful of Milk or Slippery Elm Tea, three times a day, on an empty stomach. While using this remedy, or shortly after, according to the severity of the discharge, or the general health being weak, you will find the following tonic preparation to give strength to the system, and in a short time relieve the disease — while using it, apply a strengthening plaster to the back or loins: Take Columbo Root, Gentian Root, Chamomile Flowers, Fennel-seed, Spikenard, and Solomon's Seal; bruise the whole, and add to 1 ounce of the powder 1 quart of good Port Wine. From a half to a wine-glassful may be taken three or four times a day. This will give your system great benefit.

The following is a French remedy, used successfully in this disease: Take of Tincture of Socotrine Aloes, 2 ounces; Muriated Tincture of Iron, ½ ounce; mix. Dose: thirty-five drops, three times a day, in a little water. The following injection should be thrown up the vagina or birthplace with a female syringe, three times a day, during the employment of the above Tincture: Take Sugar of Lead, 2 drams; White Vitriol, 2 drams; Pure Soft Water, 1 quart; mix.

In warm weather, the Cold Bath will be found beneficial. The following external irritants may be of use, and are frequently used in the treatment of Whites: Blisters or Liniments applied to the abdomen or belly, loins and thighs; or Mustard Poultices, or Leeches or Cups, are of great service, with repeated frictions all over the body, to produce proper action in the skin. These remedies, however, are only used or intended to be used, where inflammation exists in plethoric or full habits.

In France and England, they have latterly adopted a new plan of treatment for this disease, which effects a change, both in the character and the quantity of the discharge, in a very short time, by mixing up the Balsam Copaiva with Wax, or Fat, and a little Opium, till it is of the consistence of Dough; it is then made into a suppository or plug, and introduced into the passage, where it may be worn for half an hour, morning and evening. The French women prefer this method of curing this complaint, as they have a great aversion to taking medicine internally. Another remedy used in France, is an excellent preparation: 1 scruple of Sulphate of Iron and 2 scruples of Aloes, with as much Venice Turpentine as will mix them

together, made into twenty pills; one should be taken three times a day.

One of the most remarkable cures of this disease, the Whites, perhaps ever performed, I had the pleasure of effecting by the French remedy, above mentioned, the Tincture of Aloes and Muriated Tincture of Iron, assisted by the injection as before given. The poor woman had suffered for ten years with this complaint, and was in the worst possible condition; for the discharge was so offensive, it could be known by a near approach to her; she was so weak she could scarcely walk, and so dejected or low spirited, that it was difficult to rouse her to the slightest effort. I began by prescribing a generous diet, there being no inflammation, and the frequent use of slightly astringent injections, like those I have before referred to. The body was well rubbed after a Shower Bath every morning. This checked the discharge, and improved the general health considerably in about four weeks. I then began the use of Tincture of Aloes and Muriated Tincture of Iron, and used it regularly for some time, when the discharge was completely stopped and the general health so far restored that she said she was perfectly well. She recovered her flesh, the sallowness left her skin, the limbs became strong, and cheerfulness took the place of the melancholy that she had formerly labored under. The change was indeed so great that her friends scarcely knew her, and she is now living in Louisville, Kentucky, in the enjoyment of fine health.

In closing this important subject, let me advise always to keep the feet dry and warm, and the dress sufficient to prevent chills and colds. Gentle employment of the mind and muscular powers will greatly assist in the cure of this disease. Women in the country, who lead a more active life, who breathe the fresh air and live on plain food, are less liable to this complaint than those in cities. Women of a delicate make and inactive life, living amidst all the fashionable luxuries, which are great drains upon the body and mind, see the sure consequences in alterations of the functions of the body, which produce a weakness of the whole system, and shorten the natural duration of human life. The mutual relationship and constant interchange of action subsisting between our mental and corporeal natures, can scarcely have escaped even the most careless observation. Let the functions of either be disturbed, and more or less disorder will straightway be reflected to those of the other. The hardiest frame must suffer under the agitations and afflictions of the mind; and the firmest mind can not long remain unharmed amid the infirmities and sufferings of the body. Few, we imagine, have formed any adequate estimate of the bodily ills which originate in the mind. Even the physician, concentrating his attention upon the physical, is very liable to neglect the mental causes of disease, and thus are patients sometimes subjected to the harshest medicines for relief, when the true origin of the disease originates and continues from some inward and rooted sorrow, which a moral balm alone can reach.

Many of the physical evils—the want of vigor, the inaction of the system, the languor and hysterical affections—which are so prevalent

among the delicate young women of the present day, may be traced to a want of well-trained mental power, well-exercised self-control, and to an absence of fixed habits of employment. Real cultivation of the intellect—earnest exercise of the moral powers—the enlargement of the mind by the acquirement of knowledge, and the strengthening of its capabilities for effort, for firmness, for endurance of inevitable evils, and for energy in combating such as they may overcome, are the ends which education has to attain. The power of the mind over the body is immense. Let that power be called forth; let it be trained and exercised, and vigor both of mind and body will be the result. There is a homely, unpolished saying, that "it is better to wear out than to rust out;" but it tells a plain truth—rust consumes faster than use. Better—a million times better—to work hard, even to the shortening of existence, than to sleep and eat away this precious gift of life, giving no other evidence of its possession. By work or industry, of whatever kind it may be, we give a practical acknowledgment of the value of life, of its high intentions, of its manifold duties. Earnest, active industry is a living hymn of praise, a never-failing source of happiness; it is obedience, for it is God's great law for moral existence.

INFLUENCE OF THE MIND DURING GESTATION.

THERE is, perhaps, no department of Medical investigation which requires so much attention as the Mind during Pregnancy. It is, therefore, much to be regretted that females should give so little attention to so important a subject as this. The time, however, can not be far distant, when a knowledge of the laws that govern woman's constitution, under all circumstances, will be considered an indispensable branch of female education. Hitherto palliatives and curatives have been the principal means sought after and relied on; but when more liberal and enlightened views are obtained—when the cobwebs of false delicacy have been swept from society—when women are taught the importance of a knowledge of their organism, preventives and first principles will have their sway and take their proper place.

The physical and organic laws, when truly understood, will appear to the mind as institutions of the Creator, wise and salutary in themselves, unbending in their operation, and universal in their application. These interest our intellectual faculties, and strongly impress our sentiments. The necessity of obeying them comes to us with all the authority of a mandate from our Maker. While we confine ourselves to mere recommendations to beware of dampness, to observe

temperance, or to take exercise, without explaining the principle, the injunction carries only the weight due to the authority of the individual who gives it, and is addressed to only two or three faculties — veneration and cautiousness, for instance, or self-love in him who receives it. But if we be made acquainted with the elements of the physical world, and with those of our organized system — with the uses of the different parts of the human body, and the conditions necessary to their healthy action — with the causes of their derangement, and the pains consequent thereon — with the obligation to attend to these conditions, because enforced on our moral sentiments and intellect, as a duty which is imposed by the Creator, and which we can not neglect without suffering punishment; then the motives to observe the physical and organic laws, as well as the power of doing so, will be necessarily increased. It is only by being taught the *principle* on which consequences depend, that we become capable of perceiving the *invariableness* of the results of the physical and organic laws, acquire confidence in, and respect for, the laws themselves, and fairly endeavor to accommodate our conduct to their operation.

These remarks should be sufficient to convince us of the great influence which the mind exercises over the body, and the important principles which govern the health of both mother and child during the period of Gestation or Pregnancy. The effect, likewise, of the mother's imagination and sentiments on the mental constitution of her offspring, is a subject of the deepest interest to mankind; on obedience or disregard to this important law of Nature depends the happiness or misery of the domestic circle — the birthplace of the affections — the shrine of the heart. Prosperity may shower its brightest gifts on man; wealth and art may combine to beautify and embellish his habitation; science and literature may elevate his understanding, and refine his taste; the good and the wise may court his society; he may be exalted to the highest place in the gift of his countrymen; of what avail are all these advantages, if his home presents a scene of corroding anxiety or humiliating mortification, caused by feeble, sickly, or inefficient and badly organized children? Not until the public mind is fully awakened to the importance of the laws which govern a healthy action of mind and body, and also the hereditary descent of intellectual and moral qualities, can domestic happiness be predicated to a moral certainty, or approximate to a more perfect state. That order and law govern all matter, animate and inanimate, is too well established to admit of a doubt. Shall it then be said, that so important a subject as the physical and mental constitution of our children, is a mere

matter of chance — the only department of creation not subject to fixed and invariable laws? Every just appreciation of the wisdom and goodness of a beneficent Creator forbid it! His laws are irrevocable; on the heads of the transgressors descends the punishment. It is written, "The sins of the parent will I visit upon the children."

Children take more of the mental constitution and temperament of the father than the mother. That the physical constitution is derived or controlled almost exclusively by the mother, appears, from close observation, to be fully evident. Hence, we may properly reason, that if a father is dull, heavy, and stupid habitually, from the effects of liquor, or even at the time of generation, the child will partake of his mental temperament to a greater or less degree. I will here quote one or two facts in elucidation of my opinion. Some years ago, I was the attending physician of a gentleman in Virginia, who occupied a distinguished office under the Government, was highly respected, and belonged, as a common phrase expresses it, to "one of the first families of Virginia." He married a Miss P., a lady of twenty-two years of age, inheriting from both her parents a most vigorous constitution, combined with great personal beauty, but dull mental temperament. Her husband was thirteen years her senior, and also blessed with perfect health, and possessed all the qualifications of a gentleman, save one, *sobriety*, for he was a *periodical drunkard*. This propensity he inherited from his father; his ungovernable thirst for alcoholic stimulants, or monomania — for in truth it might be called such — generally occurred every nine months, and the approach of this peculiar susceptibility usually produced a most depressed state of mind. How often has he exclaimed, as strongly impressed with the belief that the result would be fatal, "Worlds would I give, if I possessed them, if I could get rid of this influence — this morbid thirst for liquor — this poison of hell; but, alas! I have no power to resist it." Overcome by this instinctive impulse of the mind, he would take his jug of whisky to his room, and there drink to excess, until a general exhaustion of the whole nervous system took place, or until Delirium Tremens was the consequence. I have seen him suffer frequently in these convulsive spasms, until the perspiration would start from every pore, until Nature was overcome by these terrible paroxysms, and the enfeebled sufferer sink into madness from a diseased state of the brain. It was not uncommon for him to solicit restraint, on perceiving a tendency to the recurrence of such a mania, rather than expose those he loved to the risk of being injured. A breath of air, or a ray of light, a motion, a sound, or the sight of any object, would excite the fiercest convul-

sions. How often have I heard him make the most solemn promises to his wife of entire reformation. Again and again I have seen this talented and kind-hearted man bowed for days to the very earth, under a sense of his transgressions. But, alas! after recovery, he went forth to commit the same sin. And yet, in this terrific disease, he would often exclaim, "Blessed Saviour, take this cup of affliction from me, and let me sit at Thy feet, clothed in my right mind! Cast out this demon which I can not subdue! Oh! God, give me power by faith to overcome this temptation — this dreadful propensity — this thirst for liquor!"

In proof of the consequences of this unnatural indulgence in liquor, and the injurious effects of his intemperance, Mrs. —— had three children: the first was sickly and weak, weighing not more than two pounds at birth, which lived but a few weeks; the second, a female, born an idiot, now in the Lunatic Asylum; the third, a son, who, at the age of fifteen, became, like his father, a periodical drunkard, licentious and reckless, indulgent in all his appetites, and devoted to liquor to a degree almost unparalleled. I was present at the birth of these three children. Now is not this strong evidence that the father stamped his character upon his children most perfectly? Then look at the subject in its true light, and see how many pure-hearted and lovely women have drooped in spirit, and health, and their happiness been destroyed, when they have learned, too late, that they have been united to a drunkard, or a profligate and licentious man.

In these remarks there is one exceedingly delicate point which I must allude to, so as to prevent an injury that probably a whole life can never repair. Remember, when you become *enceinte*, that the father has complete influence at this period over the fœtus, before its formation—the mother, exclusively, afterward. Then how essential that the father, as well as the mother, be pure in thought and free from vice, as they have so strong an influence upon the disposition and temperament of unborn generations! Why, then, should parents who profess the highest motives and affections for their children, not reflect on the dreadful consequence of conferring on their offspring this inheritable vice, Intemperance? The parent who yields to this habit, may undoubtedly confer, in many instances, a desire which may be easily called into action by circumstances or an impulsive feeling, which wars against reason, and even a consciousness that it is wrong. Though this desire itself, in many instances, is an ungovernable propensity, nothing is more true in its consequences than this fact, that each and every infant, during the time of Gestation, possesses an inherent faculty of thought, volition, and feeling, conferred upon it from the influence or state of mind of the parent.

There is no period of life at which it is of so much consequence to observe tranquillity of mind, and to avoid stimulants, as during Pregnancy. Not only is the nervous system then unusually susceptible of impressions and disease at this time, but the mind, from the slightest cause of excitement, may impart or exercise peculiar traits of character in the offspring, as we have evidence, in many instances, of a craving and capricious desire for food, which not unfrequently marks the infant. That impressions received by the mind of the parent are, in their influence, transmitted to the offspring, is undeniable, since experiments have demonstrated the fact in the clearest manner. But, with this profound subject is connected an important secret, which peculiarly belongs to the Omniscient. The holy of holies is before us, where the Highest reveals His glory. We can not lift the vail. Let us bow in reverent awe, and wait for fuller knowledge. Such facts, relating to creation and procreation, however, as are important to our conduct, are sufficiently manifest to our understanding, although we still find ourselves unable fully to explain them; such is this power of hereditary transmission of peculiar tendencies, both moral and physical. Here Matter and Mind unite in a point which Science acknowledges to be beyond the reach of her microscopic vision. It is important to observe, however, that training counteracts propensity even in a dog, and though the education of a human being does not destroy bodily temperament, yet so long as the faculties are clear, it may always be subdued by superior motives. It is only the brutal part of man's nature that seems to be derived. Truth, knowledge, religion are not propensities, but they are the correctors of all error. With their aid alone can we restrain and guide impulse to right ends; but, of course, the mind, that is not amenable to moral law, must be altogether subject to brute instincts, and ought to be treated accordingly — by physical restraints, and the removal of excitants.

S. T. Coleridge said, that the history of man, for the nine months preceding his birth, would probably be far more interesting, and contain events of greater moment, than all that follow it. Southey fancied that Coleridge was not in earnest in uttering this startling sentence, but, perhaps, the words convey too profound a truth for the doctor's former vision. Their meaning will shine out if we reflect on the influence which the mother's and the father's habits exert on the constitution molded *in utero*. There the groundwork of all history is laid in embryo, and the seeds of evil there begin to take root, and to vegetate in a genial soil, long before they open their leaves to the sky. The soil, indeed, alters not the nature of the seed, but vast is its effect on development, and no one can doubt that the state of the parent determines, in a large measure, the predisposition of the off-

spring. Every thing that can be classed with chemical agents must be material; but feeling, perception, memory, and will, are not in the list of elements. If, therefore, that which perceives and wills is not material, and yet has power to impress the brain of a parent, and to alter the condition of imperceptible atoms in his blood, so that the impressions shall be transferred to succeeding generations, it follows that the parent's state of soul has a modifying influence on the ovum, and in some measure determines its after development. It is, indeed, a wonderful fact, that the experience of the parent should produce such a bodily change in himself as to affect the future tendencies of his offspring. But so it is; each new individual inherits a predisposition according to the habits of those from whom he is derived, thus palpably proving the truth of that startling declaration: "I will visit the sins of the father on the children unto the third and fourth generation of them that hate me, and show mercy unto thousands of them that love me and keep my commandments."

Thanks be unto God, when good is brought into operation, the evil must wear out, but the good never. If goodness, that is, the obedience of faith, working by love, were not omnipotent, society could never be improved — for propensity to sin, or to act from selfish impulse alone, is physiologically proved to be unavoidable and irresistible, unless the spirit of holiness be imparted. But experience also demonstrates that immorality does not necessarily continue; the entrance of true light, through the mercy and goodness of God, gives new power and direction to the soul; for then, under Divine encouragement, it looks by faith to Omnipotence for help, and finds it. The man whose heart is fixed in the worship of love, beholding the beauty of holiness as revealed in Immanuel, is no longer a selfish creature, of mere propensities and impulses. He dwells with God; therefore, whatever is not pure, is so far and forever hateful to him; for faith in the Divine Perfectness permits us neither to desire what is forbidden, nor to despair of what is desirable. One thought effects a total revolution in the soul. Eternal life absorbs the heart, and ceaseless prayer is the sole feeling of a dependent and yet full existence.

We can not aim too highly, nor hope too ardently, since the largeness of God's promises is proportioned to His power to bestow, and man's capacity to receive; therefore the prospects of the confiding spirit are as bright as heaven and as boundless as eternity.

SUBSTANCE FOR OINTMENTS.

In making Ointments, Pomades, etc., the use of Lard has given way to refined preparations of Petroleum, known now as Vaseline, Cosmoline, Petrolina, etc. See note, page 291.

FOR THE PERUSAL OF MOTHERS.

OF all the children born, about one-half die before they attain five years of age. It is little short of a mockery of Creative Wisdom to suppose that this is unavoidable. The great mortality among children, like all human evils, may, in a great measure, be averted by proper treatment. Every mother who sends for a doctor to her sick infant, is practically of the same opinion. The proximate causes of death in infancy are very numerous, and such is the extreme delicacy of the little tenement of life, that even the smallest injury, something quite unforeseen, will often prove fatal in a very few minutes. It is very certain, however, that there is a greater likelihood of preserving the lives of children, when proper care is taken for that purpose, than where there is no care. It behooves every mother of a family to educate herself on those points which chiefly affect the health of her offspring.

Mothers do not, in general, act upon regular principles in the early nurture of their infants. The lower class are excessively ignorant, often superstitious, and generally are far from being cleanly, or attentive to a variety of circumstances, affecting the comfort of their children. The higher class of mothers are, perhaps, not so ignorant, and they are, at least, able to purchase advice; but they are, in the main, culpably careless on almost every point with regard to the nurturing and bringing up of their family. Instead of attending to them themselves, the parents usually hand them over to individuals who are totally unacquainted or prepared, by education or instruction, for any such duty. It is indeed a very curious fact, that the early physical and mental training of the higher order of society, including those who affect to consider themselves as ranking among the higher class, is almost entirely in the hands of the most ignorant females in the country. The mothers who generally manage their children the most advantageously, and with greatest credit, are the wives of tradesmen, farmers, and men of business, who possess a sufficient degree of common sense to guide them in their maternal duties, and are not above attending to their children in their own proper persons. Among the respectable and intelligent portion of the community, the parlor is often the nursery; and it is from the mouths of the parents that the earliest principles of morality and religion, as well as the rules of external decorum, are first implanted in the susceptible infant's mind.

If there be one law of Nature more obligatory than another, it is that which is laid upon mothers to nurture and rear with scrupulous care the tender offspring which have been graciously committed to

their charge. What must we say of that woman who recklessly resigns this sacred office to others, and leaves her children either to fall victims to an improper mode of treatment, or to grow up with faculties obscured, and perhaps their physical frame debilitated or distorted. In cases in which nurseries apart from the sitting room of the family are indispensable, they should be placed in an airy part of the house, and be subject to careful regulations. For example, the sleeping apartments of children should be separated from the day-room, and should have no fire in it, with the exception of cold, wet days, change of weather, or sickness. At night there should be no fire in their sleeping rooms, except in cold or damp weather. To bring up children night and day in close, confined rooms, with fires, is most injurious to their health, for the air becomes heated, and keeps the children or inmates of the room in a constant stew, so that when they are exposed to the ordinary atmosphere, they are liable to colds.

From the nature of the infant, and the adaptation of the milk to its growth and development, it is obvious that it ought to have that full and regular supply of this fluid, which the full nourishment of the infant constitution requires. Hence the necessity or importance, in the event of the absolute incapacity of the mother, from debility or sickness, to suckle her child, of procuring a healthy nurse to supply her place. The natural relation, however, which subsists between the mother and her own child, can not be too cautiously interfered with; for sometimes a change to a strange nurse proves more injurious to a tender infant, than the continuation of its support from even a much weakened mother. There is a certain adaptation of the mother to the constitution of her own child, that renders her, generally speaking, its very best nurse, and unless there be sufficiently strong reasons for dissolving their connection, this natural adaptation should be preserved unchanged. When it is reckoned absolutely necessary to make a change (from the mother to a strange nurse), careful attention should be paid to the age of the child, with the period of her nursing, the age of her milk, and its qualities, her constitution, general health, and cleanliness; these points must not be overlooked. The milk of the mother, or nurse, must at all times be adapted to the age of the infant, its wants and powers of digestion; and if this adaptation is not observed in changing the nurse, the result is derangement of the whole functions of nutrition, and for these reasons: When the infant is newly born, digestion is weak in its first performance, and only attains strength with the increasing physical development of the system. On this account, the milk of the mother at its birth is weak and watery, and easily digested. But as the infant becomes older, say four or five months, its body has

grown considerably; its waist is greater, and its power of digestion to supply is much increased. On this account, the milk of the mother becomes much stronger with the age of the infant, so as to yield a greater amount of nourishment in less bulk than formerly. Now if this be not kept in view, painful and serious consequences may ensue. Should a new born infant, for example, be put out and suckled by a nurse that has given milk six months previously, the milk will prove too nutritive; it does not digest easily, and causes derangement of the stomach and bowels; or by its over-nourishing or stimulating nature, induces a disease of fever or excitement, to which the infant is constantly more or less constitutionally subject. On the other hand, should a child of six months be put to nurse on a mother's first month's milk, the opposite consequences will ensue; the child will not be sufficiently nourished, it becomes quite weak, and hence equally prone to disease. It is necessary, therefore, to preserve this important relationship between the mother and the child, so far as lies in our power, as it is in accordance with the clearest dictates of nature and common sense. A nurse requires nothing more than ordinary, nourishing, and plain food, always choosing that which agrees with her stomach and bowels best; both a vegetable and animal diet is natural and healthy, having which, with proper exercise and cleanliness, if enjoying sound health, the nurse is fully competent for her purpose; but if she is weakly, the most suitable diet to the producing a secretion of healthy milk becomes necessary.

When the infant has got the first front teeth and has become accustomed to the use of prepared food, weaning should then begin. By degrees it must gradually suck less, while the supply of the prepared food must be increased until the infant has no further use for its mother's milk. Sudden weaning is injurious to health. Weaning should not take place earlier than the eighth or ninth month, nor later than the fourteenth or fifteenth. It depends, however, in the first instance, on the situation of the mother; the infant, generally speaking, ought to have the four front teeth. It must be regulated very much by circumstances. Should the infant be naturally of a delicate constitution, and have suffered much from teething, or from any of the diseases of infancy, and the mother's milk continues plentiful and sufficiently nourishing, weaning may be deferred beyond the usual time or period.

I shall now call your attention to clothing infants, which is of the utmost importance, and should be strictly attended to. The first covering of the infant's body should be of cotton in the winter, and linen in the summer, which should be regularly changed and aired, night and morning, as its dryness and cleanliness, when worn, con-

tinue to preserve the skin in a healthy condition, and keep the constitution sound. Above the inner covering a dress of flannel should be worn, thicker or thinner, according to the severity of the climate or season. Flannel used in this manner is proper for infants, being loose in its texture, and also a non-conductor of heat; it preserves, with little diminution, the animal warmth, and by its looseness affords, also, a greater surface for the gradual evaporation of the perspiration, which it readily takes up through the inner dress, and thus conveys away, without producing too sudden a depression of temperature on the skin. On this account its use is resorted to with the greatest advantage in advanced years, when those circumstances which form objections to its being worn nearest the skin in infancy, do not apply, but are rather a recommendation in its favor.

There is considerable risk in children suffering from exposure to cold during the night, by tossing off, in their restlessness, the bedclothes which cover them, as well as from their greater susceptibility to cold during sleep, when the power of the constitution to resist it is considerably diminished. To obviate, therefore, as far as possible, the danger arising from this cause, a long flannel night-gown should be worn over the cotton shirt, sufficient to preserve the child's natural warmth.

The head should always be kept perfectly cool; in winter, of course, it must be covered with a comfortable cap, when out of doors, not too heavy or close in its texture. Comfort, not warmth, is all that is necessary. Any thing that is too heavy or too warm, accumulates too much heat about the head of the child, and thus favors too great a determination of blood to the brain, an event that often takes place, deranging that delicate organ as well as increasing the dangers of teething. Within doors, if covered at all, it should be only with a cap of the thinnest materials. It is better, in my opinion, after the infant is two months old, in warm weather, to leave the child's head altogether uncovered. By leaving the head without a cap, the hair grows much faster and gives it the necessary covering which Nature usually provides for it. During sleep the same rules ought to be observed, that is, to allow the child, when somewhat advanced, to sleep without any head covering; for I have every reason to believe that many diseases of the brain are produced from this cause. At all events, if a cap is deemed necessary, a very thin one should be used.

Widely different is the physical state of an infant from that of a grown person. The newly formed bones of the former are soft and flexible, and may easily be made to assume any form, especially when the body is in a diseased state. This accounts for the common origin of such irregularities of form as are not of natural origin, but occur

at an early period of life. In proportion, therefore, to the delicacy of the infant, will be the care required in its raising.

Much has been effected in this way by constant and persevering attention, and many weakly and unpromising children have, by judicious treatment and care, been raised to maturity, and have passed through life in the enjoyment of a considerable share of health and vigor. A finely formed body is favorable to the enjoyment of sound health. Every one is struck with the commanding figure, the graceful appearance of a person so formed, but few inquire into the reason why all are not so gifted. If parents would have their offspring free from personal defects — if they would have their limbs molded into the form indicative of grace, activity, and strength — they must commence their attention to their children from the time of birth. Though they may not always succeed in securing for them the highest state of physical perfection, yet they will generally be able to effect such an improvement in their constitutions, as will form the basis of future health.

Children should not be too early set upon their feet, but should rather be placed upon their backs on the floor, that they may exercise their limbs with freedom. The former practice is a frequent cause of malformation in the lower extremities. Especial care should be taken that the spinal column, so tender in young children, does not take a wrong direction. The manner in which a child, and especially a delicate one, is suffered to sit on the nurse's arms and lap, should be very carefully attended to. Until it has acquired sufficient strength to keep itself erect, its back ought to receive proper support. By being suffered to sink in a crouching posture, with the head and shoulders inclining forward and the back projecting, a bad habit is soon contracted, which often leads to distortion of the spine. Neither is it in the arms alone that this attention is required, the effect is not less injurious if the child be suffered to sit upon a chair, as, when fatigued, it will naturally adopt that position, which, at the moment, affords most ease. Here it may not be improper to notice the very common practice of raising a young child by its arms, in such a manner that the sides of the chest being pressed by the hands, or rather the knuckles of the nurse, its cavity is diminished, the sternum or breast-bone, pushed out, and that deformity produced in delicate children commonly called "pigeon-breasted."

You should never strike children on the head; many fatal cases have been produced by this unnatural method of correcting children. I recollect a sad case of this kind, which caused the death of an interesting child, two or three years of age, by a hasty blow from the hand of its father. The child was standing upon a chair, and in a

moment of petulance, the parent struck it on the head, precipitating it head foremost upon the floor. It soon fell to vomiting, and expired the next day. I have often seen mothers strike their children on the head. This mode of chastisement is not only dangerous, but often produces diseases of the brain, which may terminate fatally, or otherwise produce many diseases throughout life.

Plain diet is what children ought, on every account, to be accustomed to from the very first. It is more suitable for their present health and comfort, than those little nice things with which fond parents are so apt to vitiate their appetites; and it will save them a great deal of mortification in after life. If you make it a point to give them the best of every thing—to pamper them with rich cakes, and sweet-meats, and sugar-plums; if you allow them to say with a scowl, "I don't like this," and "I can't eat that," and then go away and give them preserves or candy for their dainty palates, depend upon it, you are doing them a great injury, not only on the score of denying them a full muscle and a rosy cheek, but of forming one of the most inconvenient habits that they can carry along with them into after life. Better, far, to put them upon water gruel or brown bread, till their appetite comes, and they can be satisfied with such food as others eat at the same table. If you accustom your children "to eat what is set before them, asking no questions," they will always find something, among whatever class of people they may afterward be thrown, upon which they can make a comfortable meal; whereas, if you allow them to mince and find fault at your own table, when they come to leave you, they will not, half the time, find any thing they can eat, and thus you will prepare them to go chafing along through life, the veriest slaves, almost, in the world.

Whether an infant be suckled by its mother or by a hired nurse, it is evident, that no other food can properly supply the place of the breast-milk in early infancy. It is of importance, therefore, to inquire what diet, supposing a woman to be in health, is best fitted for promoting the due secretion of good milk; what exercise a mother who is suckling, ought to take; and at what times the infant ought to be suckled. In reply to the first inquiry, I advise every woman to adhere, as much as possible, to plain, light, and nutritious diet; and to abstain from highly seasoned food, salted meats and poultry. A very mistaken notion prevails among the fair sex, that vegetables must be avoided by nurses; on the contrary, every nurse should eat a moderate share of well-boiled vegetables at dinner; and ripe fruit, if it agree with her at other times, can not prove hurtful while she is suckling, provided it is eaten in the forenoon. From the fluid nature of the milk, nurses require a larger supply of beverage than

other women, but this should neither be strong or soporific, but diluting, bland, and cooling. In females of delicate habits, and during the progress of suckling, when the nurse is conscious that her strength is failing, ale or porter, or a moderate quantity of wine, may be requisite. But if these are indulged in, they should be accompanied by a large share of mild diluting liquids, as weak tea, milk and water, barley gruel, or rennet whey. Supper is a meal which every nurse, who performs her duty to the infant, requires; for she who resigns her charge during the night to a maid, to have its cravings supplied by the feeding-bottle or spoon, scarcely deserves the name of a nurse.

With respect to exercise, every nurse should walk out daily, or take exercise in a carriage, if too delicate to walk without suffering from fatigue. But no exercise should be taken which can hurry the circulation of the blood; for as the milk is formed from the vital fluid, it is evident that its secretion or preparation in the glands of the breast can not be properly effected, if it be carried in too rapid a current through them. Hence, nurses ought to refrain in all cases from dancing, and even from riding on horseback, unless the movements of the horse be extremely easy.

For the same reason, every agitation of spirits ought to be avoided; for the softness and serenity of the female character are necessary, especially in the nurse. It is vain to expect a healthful rill to flow from the fountain of infantine nutriment, when the poison of discord is infused in the bosom, and the heart is swelled with acrimony and vehemence. But in securing that complacency of disposition in the nurse, which is so necessary for the well being of the infant, both parents must concur; for who can expect equanimity in the wife, who is harassed by contradiction and debate, and who seldom feels the solace of those endearments which esteem and love can only secure in connubial intercourse? Nothing interferes more with the duties of the nurse, than irregular hours; hence I affirm that no characters are more inconsistent than those of the nursing mother and the pleasure-hunter. With respect to the times of feeding, it is true that the child may be inured to any habits which the nurse may adopt; but the child who is accustomed to be suckled at fixed periods, is always the most healthy. The stomach is less likely to be overcharged from excessive hunger, or to be nauseated by the crowding of one meal upon another, to suit the engagements of the nurse. Young children require to be more frequently nourished than those who are more advanced in age. At first the interval between each period of suckling, should not exceed two or three hours; but, when the child is four months old, it may extend to four hours, and to six during the night if the child sleep well. To females who have the

true feelings of a mother, these intervals are sufficient to permit exercise, and the pleasures of society as far as they ought to be indulged in by the rational nursing mother.

From what has been detailed, the following conclusions may be deduced respecting the food of early infancy:

1st. That the breast milk, being prepared by Nature for the support of the infant, is preferable to every other kind of food.

2d. That when the mother is healthy, and the supply of breast milk is sufficient, the infant should be supported on it alone.

3d. That in order to secure a healthful and abundant supply of the breast milk, the diet of the mother or the nurse should be light, nutritive and unstimulating; that her mind should be kept in a tranquil state; and everything should be avoided which can hurry the circulation and heat the blood.

A great error exists in giving children medicine continually, which is too frequently productive of serious consequences. Purgative medicines ought at all times to be given with caution; Castor Oil is preferable to any other, being the mildest and least irritating.

THE WIFE.

IN comparison with the loss of a wife, all other earthly bereavements are trifling. The wife! she who fills so large a space in the domestic heaven — she who is so busied, so unwearied in laboring for the precious ones around her — bitter is the tear that falls on her cold clay. You stand beside her coffin and think of the past. It seems an amber-colored pathway, where the sun shone upon beautiful flowers, or the stars hung glittering over head. Fain would the soul linger there. No thorns are remembered above that sweet form, save those your hand may have unintentionally planted. Her noble, tender heart lies open to your inmost sight. You think of her now as all gentleness, all beauty and purity. But she is gone! The dear head that laid upon your bosom, rests in the still darkness, upon a pillow of clay. The hands that have ministered so untiringly, are folded, white and cold, awaiting the gloomy portals of the grave. The heart whose every beat measured an eternity of love, soon will lie beneath your feet. The flowers she bent over with smiles, will then bend above her with tears, shaking the dew from their petals, that the verdure around her grave may be kept green and beautiful.

Many a husband may read this in the silence of a broken home.

There is no white arm over your shoulder; no dear face to look up into the eye of love; no trembling lips to murmur the kindest feelings of the heart. Ah! how sad! how lonely you feel! for the idol of your heart is gone. The little one whose nest death has rifled, gazes in wonder at your solemn face, puts up its tiny hands to stay the tears, then nestles back to its father's breast, half conscious that the wing that sheltered it most fondly, is broken forever.

Remember, then, that nothing in life is so pure and devoted as woman's love. Wound not, then, the heart that loves you — that fountain of unsealed and gushing tenderness. It matters not whether it be for a husband or child, or sister or brother, it is the same pure unquenchable flame, the same immaculate glow of feeling, whose undeniable touch-stone is trial. Give her but one token of love, one kind word, or one gentle look — even if it be amid poverty, desolation and death — the feelings of that faithful heart will gush forth as a torrent in despite of earthly bonds or mercenary ties. More priceless than the gems of Golconda is the female heart; and more devoted than the idolatry of Mecca is woman's love. It is a dear delight for the soul to have confidence in the faithfulness of a wife. It makes a pillow of softness for the cheek which is burning with fears and the touch of pain. It pours a balm on every sorrow. It is a hope undeferred — a flowery seclusion into which the mind, when weary with sadness, may retreat for a caress of constant love.

Bereavements long withheld, descend sometimes as chastening griefs upon our nature, to remind us of our duty to our Heavenly Father, and direct our thoughts to that happy and blessed home "where all tears and sorrows shall be wiped away," "and we shall meet those dear ones, to go out no more forever." There is healing in the bitter cup. God takes away, or removes far from us those we love, to increase our faith and impress on our minds the uncertainty of life, and to teach us to look forward to a reunion in another world, where there will be no more separation, and no mutability, except that which arises from perpetual progressiveness. Faith is that precious alchemy of the soul which transmutes grief into joy; that pure and heavenly change which clears away the film from our mortal sight, and makes affliction appear what it really is — a dispensation of mercy. Then cherish the remembrance of that faithful friend, that dear departed wife, whose holy presence, as a ministering spirit, is probably now guarding your innocent children. In all new and pleasant connections, give her spirit a place in your heart. Never forget what she has been to you. Be tender of her memory; so you may meet her, with a soul unstained, in that bright and beautiful world.

Wife and Mother! What sacred memories cluster around those words! That being, whose affections will linger around us to the very last! What sweet consolation in the hope when this freed spirit is released from its earthly tabernacle, we shall again behold those we have loved on earth, in the home of the blest, whose deep sound of joy no mortal ear hath heard; where our friendships will be renewed; where God hath said, "Eye hath not seen, nor ear heard, nor has it ever entered into the mind of man, to conceive the joys He hath prepared for those who love and serve Him."

Consider who deprived you of that dear wife and companion. Was it not God? Did not He that gave her to you, take her from you? May He not do what He pleases with His own? Is there any defect of wisdom or goodness, of justice or mercy, in God's disposal of your wife? Or, will you ever have rest but in submitting to the Divine good pleasure? You must not have all your mercies conveyed to you merely by one instrument. Therefore, when one dear friend has done her part for your welfare and happiness, God will send you other mercies, by another hand; and it is fit He should choose the messenger who bestows the gift.

But there are some who doubt whether heaven itself will renew those friendships of earth. To remove such a distressing apprehension, let the following reasons, which are supported by God's Word, be sufficient: you can not think that the knowledge of glorified saints shall be more imperfect than their knowledge was while they were upon the earth. We shall know much more, not less than before. Heaven exceeds earth in knowledge as much as it does in joy. The angels of heaven have now a distinct knowledge of the least believers on earth, and rejoice in their conversion, and are styled by Christ "their angels." Therefore, when we shall be equal to the angels, we shall certainly know our nearest friends, who will have their share with us in that glory. And though God be all in all in heaven, yet we shall there not only know, but love and rejoice in our fellow-creatures; for Christ, in His glorified human nature, will be known and loved by all His members without any distinction, in the glory of His Divine nature. The several members of the body of Christ will in heaven be so nearly related to each other, that they must know and love each other, and not be unconcerned in each other's felicity. The future triumphant state of the Church is often described in Scripture as a kingdom, the city of God, the New Jerusalem; each of which implies a society. As one part of the saints' happiness, they are to come from the east and west, and sit down with Abraham, and Isaac, and Jacob, in the kingdom of heaven; therefore, they shall not only know those great patriarchs, but shall take peculiar

delight in their presence and converse. Besides, love to saints, as well as to God, is a grace that never faileth. Yes, religion's bow of promise points his aspiring though humble spirit to the future, the glorious hope of meeting again those we have loved on earth.

When we cast our eye back through the dim vista of the past, and recall to mind the friends of our life, we are led to inquire, "Where are they?" With all the numerous throng with whom we sported away the laughing and happy hours of infancy, whom we could firmly grasp by the hand and enjoy our innocent pastimes, how few now meet our wandering eye! Some, in their journeyings through the vale of human life, have been called to other climes — to distant, strange lands; some have gone to their final resting-place, the tomb; others been turned from us by the repulsive power of their cold feelings of estrangement.

But there are a few choice spirits who still linger around us, irradiating, like stars, the sky of our being, diffusing a halo of delight through it, rendering it brilliant with the light and hope of joyous expectation. These we link with a few departed companions of our early years, who are gone from the trials and temptations of this sinful world to that happy home, where, we fondly trust, we shall meet them again in that pure and heavenly rest, where our souls may commingle together, united in the bonds of holy affection, through the long and ceaseless ages of eternity! It can not be that those dear beings, whose hearts once beat mutually with ours, whom the Angel of Death has hid from our gaze, and whose names, with the cold and selfish world, are destined to float for awhile on the tide of remembrance, then pass away into the sea of forgetfulness, are fated never more to meet our view. No: there is a voice that comes from our blessed Jesus, "As my Father hath loved me, so have I loved you." There is a closer fellowship, for it is that of spirit as well as of mind; for God, that is all love, would never have created hopes that are to be bounded by the grave. Ours is an immortal friendship, for it rests on an imperishable basis. It is not union so long as we travel together, but union, too, in our everlasting rest.

A few short years of evil past,
We reach the happy shore,
Where death-divided friends, at last,
Shall meet, to part no more.

We feel that death puts an end to our friendship; but Christ's friendship only moves a step closer when mortality intervenes. It is not for a moment suspended. The spirit rises to Himself, to the enjoyment of His presence, and to forms of intercourse and endear-

ment which can not now be imagined. So it was in the history of Enoch: To-day, he "walked with God" on earth — to-morrow, he walked with Him in heaven. "*We shall meet again*," is an endearing thought, which cheers us on our pilgrimage through the dark wilderness of life — secretly admonishing us to beware of temptations, and to shun the soul-destroying haunts of vice. Remember the words of our blessed Redeemer: "He that believeth shall not perish, but have everlasting life." Cordial belief in Christ Jesus, God's own gift, brings into the heart the first pulsations of the new existence, and we shall at last have a meeting more blissful and transporting than all the joys of earth, *never to end*, where the union is at length consummated, amidst the pealing hallelujahs of grateful triumph and everlasting love — a union never to be interrupted by one passing doubt, but ever to become more joyous and affectionate in the fruits of unbroken and mutual kindness, of glory in the presence of God.

METHOD TO GET TEMPERATURE OF THE BODY.

THE actual temperature, as indicated by the thermometer, is found to vary slightly, according to the part of the body selected for observation. If, for example, you place the thermometer under the tongue, you will find that it will mark a degree or so higher than if the same instrument is placed in the arm-pit. In medical observations on the body-heat restrict to observations in two places, the mouth underneath the tongue and the arm-pit. But try the mouth, in the case of children, and you will not unfrequently have the bulb of your instrument bitten off. Such an accident is serious, for good clinical thermometers are expensive. It is, therefore, upon the whole, better to take the temperature in the arm-pit only. In order to be able to compare the records of different cases, you must take care to work in precisely the same way, and place the thermometer in the arm-pit for at least two minutes, if the bulb is a very small one, and for double that time if it is not of the smallest size. You will have little difficulty in using the small thermometer, even in the case of irritable and violent children; for you can always put it in the arm-pit and keep the child's arm nearly still for the time required.

Thermometers for medical observation, clinical thermometers as they are called, may be obtained of all the instrument makers. Those with the smallest bulbs respond very quickly, and the index comes to a stand in two minutes, or even in less time; but the degrees are small and more difficult to read off than those of larger instruments, which require to be inserted in the arm-pit for four or more minutes before you can feel sure that the mercury has come to a stand-still. Of late a great improvement has been made in the construction of the very small thermometers. The bore is so fine that observers whose eyesight is not the most perfect often find it difficult to see the index. By grinding the glass away somewhat at the sides and making the front of a greater convexity, the effect of an elongated lens is produced, and the almost invisible mercurial thread is made to appear as a broad band of mercury, which can be seen without the slightest difficulty.

SIXTH DIVISION.

TREATMENT AND DISEASES OF CHILDREN.

THE CARE OF YOUNG LIFE.

HEALTH is a great word and describes a great thing. It was not by accident that in the Anglo-Saxon tongue it is the mother-word of a score or more that are used to express the most bountiful and useful of all benefits. Wealth, well, well-done, welfare, hale, whole, wholesome, wholeness, holy, have this as their root, and are but specimens of the fulness of meaning which was felt to be conveyed thereby. The saving health among all nations was the climax with which the English translator sought to convey the Hebrew idea of a completed salvation.

Not long since I overheard one of two little girls of not over nine, on their way to Sunday-school, say: "Do you know Mrs. Boice's baby is dead." "Well, it is a good thing," said the other, "for when Mrs. Jones lost her twins, I heard somebody say that she and the children were both better off." There is somehow a not always concealed feeling that the slaughter of the innocents is one of the feasible limitations of population, even though it comes through watered milk, stale food, reeking tenements, and ill care. Men moralize over these survivals of the fittest, and limitations of life, as if the Infinite Father had something to do in a conservative way with the breaches of his holy, just, and beneficent laws. It seems to me we feel thus the more because, forsooth, emigration will make up the deficiency. All this is as bad in philosophy and in national thrift as it is in morality: not only because the same causes which kill these enfeeble the living and bleach out heredity, but because all that hygiene and sanitary science mean, and all they can do to prevent disease and to appreciate life, are essential to any real progress in the objects which such a health-association as this represents. We cannot leave out of consideration the health care of population in all that it requires, as to legal enactment, as to statistics, as to the profoundest impression of its inexorable necessity on the popular mind, without leaving out one of the great arches on which we seek to build as upon sure foundations that superstructure of continuous life which we call a nation.

Next to household care, I am sure you will place the care of young life in its process of educational training. As sanitary instruction to adults is so often directly at war with habits already formed and with prejudices imbibed, there is no very great expectancy of radical improvement in the personnel of the full-grown population. To instruct adults in anything physical so as to affect their habits is a difficult task. The chief hope in educating an adult is not in the change of his habits, but in impressing his judgment and opinions so that by precept, if not by example, he will inform the rising generation.

For these and many other reasons a large part of sanitary effort should be directed to those who are yet in young life.

It is because of this that instruction in physical life, as related to and modified by surroundings, should take its place as an important study. . . . The God who made this body a temple, and adorned it with all manner of precious things, made it also to represent what fealty to law can do for its well being, and what a breach of law can do to frame mischief or iniquity, which expresses itself in physical as it does in intellectual and moral debasement. The God-like, the Christ-like in humanity, must be taken care of in accord with the law of our being as well as that of revealed will, and then shall we behold a harmony too often obscured by a lawlessness which has become so common as to be mistaken for the original fiat and stamp of the Almighty.—*Ezra M. Hunt, M. D., address before Social Science Association, Saratoga, Sept.*, 1883.

GENERAL REMARKS.

WE know no lovelier earthly scene than that presented by a mother kneeling at the couch of a dear infant (whose little arms twine round her neck in loving tenderness), and kissing its lips; from these healthy breathings come forth the pure spirit of innocence and love. The mother looks upon the child's exceeding beauty with momentary pride; then, as she continues to gaze on its lovely face, her dark eye deepens with intense and unutterable fondness at the least change of countenance, and a cold, palpitating fear comes over her, lest this bud of life, so fair, so glowing, may be touched with sudden decay, and gathered back in withered form to the grave.

What is so intense, so exalted, so fervent, so pure, so nearly related to the nature of heavenly love, as the love of a mother? Wherever we turn our eyes among mankind, we see the influence of a mother's love. In our adversities and troubles, when all whom we thought were our friends have forsaken us, a mother's consoling voice cheers and soothes our troubled spirits, by whispering in our ear, that all will yet be well. How many outcasts and ungrateful children have, in all ages, borne witness to the tenderness of her heart to the returning prodigal!

I have seen woman in all the dignity and majesty of her form, the elasticity of her step, the tenderness of her heart, the brightness of her eyes, and the smiles that have adorned her countenance; I have seen her thousand winning arts, and have felt the influence of her thousand virtues; but there is nothing to compare with that love which far excels them all — it hath no equal — that heaven-born purity, a mother's love for her children. Time never obliterates it. The mellow tones of her voice are still dear, as memory bears a lingering echo of their sweetness. No hand like hers can smooth affliction's pillow. No smile can scatter a momentary gloom like that which lights up her dear countenance in moments of affliction.

The early instruction received from a mother, has the strongest influence in forming the future character of her children. Before the mind is mature enough to think for itself, we look to those whom Nature has constituted our guardians, to correct and sanction our opinions. In this way parental authority gains a hold upon the minds of children, that never can be annihilated; therefore, parents can not be too careful or too diligent in studying the various dispositions, and, indeed, all the mental as well as physical characteristics of their children. Scarcely two children can be found who require

precisely the same treatment in all cases. Each child's peculiarities must be studied, and the treatment in each case must be such as, according to a deliberate and sound judgment, is best adapted to the individual; as the mental powers of children are developed, often when yet at the breast, certain traits in their dispositions are plainly seen.

The great secret in the government of children is to gain and retain their love; this inspires respect, and will induce obedience. You should never manifest anger. Tender reproof and reasoning, whenever the child violates any known rule of discipline, are much better than constant use of the rod. Obedience, based on fear, not on esteem and respect, makes a slave, and mars the native loveliness of the countenance of a son, daughter, or pupil. Harsh, scolding language and frequent correction often render a child desperate, particularly if it inherits a morose, stubborn disposition. Never resort to corporeal punishment, except for atrocious misdemeanors, or faults obstinately persisted in. When the rod must be used, by reasoning mildly and affectionately with the child, you may generally convince it of the propriety of punishment for the offense, and the sorrow you feel at inflicting it. By this means you convince the judgment, and thus preserve his esteem; in no other way can you do it. If he is naturally bad — for there are such children — punishment may make him worse. Blame cautiously for errors, and commend liberally for good conduct. Remember this important lesson, which may be applied to all stations in life, that "honey catches flies, but vinegar never." The laws which govern children from the commencement should be simple, plain, reasonable, and firm. To govern properly, you must always govern yourself. Let your own example enforce the precepts you inculcate. To train up a child in the right way, you must walk in the right way yourself. Children are close observers. Beware of partiality; it has been the ruin of hundreds of children; they quickly perceive it, and become envious, which eventually destroys all the finer feelings of affection and respect These early impressions are seldom forgotten or obliterated in after life.

I have often heard children remark, when aroused in their feelings, of the favoritism shown by their parents to a brother or sister, while they were neglected, "Oh! Ma, you love Willie better than you love me." The merits of the favorite may justify the feelings of preference indulged by the parents, but this feeling should be judiciously suppressed, or this maternal preference will make impressions which are deep and lasting, and often establish a recklessness of character which will destroy the hopes of maternal affection. As you wish

your children to become the comfort and support of your life, the pride of your family, the ornament of society, lay the foundation of piety, that ministering angel which should accompany them through life, then when the evening of age shall come, they will remember the prayers taught them from the lips of a pious mother. How often have these led to early piety, and been the corner-stone of greatness! How important that the first impressions of children should be correct; for they are lasting, and imprinted on memory, they will tell through future time, for weal or for woe! Impress deeply upon the minds of children the importance of always speaking the truth. Falsehood is sometimes induced by too frequent and severe punishment, causing the child to resort to lying to avoid it. In other instances, parents teach it by practicing deception on their children, by making promises to them which they do not perform. They must be made to fear to do wrong, because it is a violation of right, as well as an exposure to punishment, and to hope for a recompense when they act correctly. "Train up your children in the way they should go, and when they are old they will not depart from it." Our blessed Redeemer said, "Let little children come unto me, and forbid them not, for of such is the kingdom of heaven."

The period of Infancy — the earliest spring-time of human life — how replete with tender interest? mingling with sensations of pity and of hope, we look on the tender infant, as one of the purest, holiest, and most beautiful objects of the creation; but these sensations are of comparative indifference, when compared with the feelings of a mother; her love surpasses every other, attesting the exquisite rewards of her early pains and perils. But these sensations are not unalloyed. Hope and Fear are twin sisters, harmonizing like the light and shadow of a landscape. Knowledge of the very slender thread on which the life of an infant depends, tends to increase that vigilant care, which is alone the province, and the invariable accompaniment of the exquisite maternal solicitude of a devoted mother.

In the voyage of life, our Heavenly Father has wisely ordained that our happiness shall not be unalloyed. On almost every enjoyment is entailed, by contrast, a degree of sorrow; the more intense the pleasure, the more severe will often be the pain. Such are the extremes of pure maternal love, assuming the characters of rapture or of anguish, as prospects are lighted by hope, or shadowed by fear; and especially in the infancy of her offspring, when utter helplessness claims almost every moment of a mother's life.

The system of a child is capable of constant modification: hence it is, most frequently, in our power to mold and educate the body, and to impart to it that degree of physical perfection or health which

is essential to happiness. Thus is the Divine precept fulfilled, which teaches us to "train up a child in the way he should go, and when he is old he will not depart from it."

It is my ardent wish to impress on your mind, that *disease of body* often produces *disease of mind;* that attention to early precepts and early impressions, greatly aid in attaining that degree of perfection, both mental and physical, in which high health and the requisites of moral beauty will be found. By judicious management, we may prevent the effect of those hereditary tendencies with which frequently the infant is born. In attending to these instructions, which are of great importance, the management of the infant should commence from the hour of its birth, which introduces it to a new existence, and instantly exposes it to the influence of external causes that often become the source of disease. There is, perhaps, no subject more interesting or important for investigation and observation, than the Diseases of Children, so as, by proper and judicious management, to secure to them the greatest possible exemption from pain and disease.

The periods of life treated of in this book are Infancy, Childhood, and Youth.

Infancy may be subdivided into two periods: 1st. From birth to the commencement of the first dentition, or cutting of the teeth. 2d. From the commencement to the completion of the first dentition.

The second stage, or that of Childhood, extends from the completion of the first to the completion of the second dentition.

The third stage, or that of Youth, extends from the seventh or eighth year to the commencement of puberty.

In each of these stages of life, the child is subject to distinct diseases, dependent, however, greatly upon the peculiar development and perfection of the various organs and senses of the body.

As it is all important in the constitution of a child, to lead it in the paths of health and strength, so it is necessary to commence the management of it from its earliest infancy. By neglecting to do so, and by mismanagement at the commencement of life, the original soundness of a constitution may be destroyed; the evils of hereditary delicacy or weakness, if such exist, may also increase this predisposition, and sow the seeds of future suffering and disease, which can seldom be eradicated. By care and proper treatment, however, the constitution or organization of the child may be made strong and vigorous, and health imparted to those whose sickly and feeble frames denote a deficiency of the vital energy necessary to form a good constitution; for susceptible as children are of every impression made upon the mind, as well as upon the physical system, it cannot be doubted that innumerable modifications or changes may be made.

Indeed, it is nearly, at all times, in our power, by care and attention, so to mold or form their habits and dispositions, as to give them that degree of physical perfection and command of the passions which is requisite for health and happiness; for we are all, in a great degree, the creatures of habit and education. As they are first fashioned by instruction and example, so they grow; for we all know it is, "Mother, you told me so."

Then let me urge the importance to every mother, who seeks with unceasing solicitude the welfare of her children, to attend with care to early instruction and example; for to her management is given the delightful task of directing the dawnings of intellect, of guarding the budding and blossoming period of life. Exert, then, your reason in this important matter, and look forward with that confident expectation and hope, that when the winter of old age shall bring infirmities upon you, your child will be a ministering angel, and, by affection and tenderness, prove a comfort to you in the decline of life.

DIET AND NURSING OF CHILDREN.

MORE than half the diseases from which children suffer, are caused by the injudicious treatment they receive at the hands of those who can have no excuse for their ignorance. The influence of the brain on the digestive organs is direct. During Childhood, when the brain is, in common with other organs, in a state of great activity and rapid development, the proper arrangement of diet is of the greatest importance. Cheerful activity, cleanliness, dry, pure air, adequate clothing, and a suitable regimen, are indispensable promoters of health. Horses and cattle are carefully fed with the food that suits them best; and by humane people greater care is bestowed upon them than the majority of parents give to their children. Some may think we are coloring too highly our statement of these things; all right-minded parents love their children too much to willingly injure them. Still we may kill them by misguided kindness. Look into society as it is at present constituted, and your own knowledge will furnish many examples of grievous wrong done to children, by parents violating the physical laws of their being. We know many instances where children, if they are not removed when young from the deteriorating example and pernicious training of their parents, will, in all probability, become gluttons and drunkards. High-seasoned and unwholesome food is given in such large quantities, and at such

irregular times, that unnatural appetites are created, and digestion impaired. Stimulating and poisonous substances are administered to them to invigorate their systems, which have quite the contrary effect, and lay the foundation for all kinds of maladies in future years. Some mothers stuff their children the year round with unwholesome, exciting, and stimulating meats and drinks, until they become complete gourmands, and their whole thoughts are occupied with what they shall eat, what they shall drink, and wherewithal they shall be clothed. If parents would give their children good, wholesome, nourishing food, their drink water or milk, and let strict regularity and punctuality be observed in regard to their times of eating, a gradual change for the better would distinctly mark the rising generation, for it is most certain that parents can not be too particular about the dietetic habits of their children. Their happiness here and hereafter greatly depends upon right physiological training or treatment in early life. Yet how many mothers make their table a snare to their offspring, by pampering their appetites and loading their stomachs with improper food!

1st. Of Food.—The mother's milk is the best food. What the mother has to look to is, that her milk is of the best. She must preserve her own health by wholesome diet, air, and exercise, and by keeping a gentle and cheerful temper. Many a babe has had convulsions after being suckled by a nurse who had a great fright, or who had been in a great passion. A mother who has an irritable or anxious temper, who flushes or trembles with anger, or has her heart in her throat, from fear of this or that, will not find her child thrive upon her milk, but will have much to suffer from its illness or from its fretfulness. She must try, however busy she may be, to give its food pretty regularly, that its stomach may not be overloaded, nor long empty or craving. An infant does not refuse food when it has enough, as grown people do. It will stop crying and suck, when it is crying from some other cause than hunger; and it will afterward cry all the more if an overloaded stomach is added to the other evil, whatever it may be. On the contrary mischief — leaving a babe too long hungry — there is no need of any remarks. When the weaning time comes, it is plain that the food should be at first as like as possible to that which is given up; thin, smooth, moderately warm, fresh and sweet, and given as leisurely as the mother's milk is drawn

The earliest secretion from the nipple of the mother is the only food or physic which should be allowed to enter the infant's stomach, nor should a spoon or its contents be ever placed in an infant's mouth.

If the mother and child are in health, the milk from the breast is the only food, drink, or medicine, which will be called for during the first few months of infancy, nor should children be fed with any thing else until they cut their teeth. The process of teething would then no longer be, as now, the fruitful source of those diseases which accompany its interruption, the chief of which may be ascribed to feeding and physic rather than to the teeth. Children kept to the breast, and who have never had a spoon in their mouths, will cut their teeth without seriously suffering by the process, if previously healthy, but under the common methods of feeding, and on all occasions dosing and drugging, the laws of Nature are perverted by impairing the general health; hence the cause of so many diseases among children — diseases which are dangerous, and often prove fatal.

It is, however, the case, that children, who are feeble and sickly from birth, are often, of necessity, sustained by the spoon or bottle, especially if deprived, from any cause, of the mother's breast, and in cases of constitutional defects may require medicine; but very young children can have their bowels relieved by simple remedies, such as a suppository, or plug of hard soap introduced up the fundament, as known to every nurse or old woman. When something more active is required, then a little Sweet Oil or Castor Oil, or a solution of Manna; the last is the best and most simple purge for infants; the more simple and the less medicine given to children, the better; nor can it be doubted that hundreds of children are annually the victims of the officious meddling of nurses and doctors. Milk, Flour and Water are the natural food for a child while teethless. Giving a bit or a sip of what grown persons are eating or drinking, has often produced disease, and has destroyed many children. Most of the diseases, during infancy and childhood, arise from the stomach; therefore, the diet, and particularly the milk, should be strictly attended to.

It is a frequent practice, immediately after the birth of an infant, or as soon as the washing and dressing are done, to quiet its cries by administering gruel, or what is still more pernicious, sugar and water. It should, however, be remembered, previous to administering food, that the child has but just emerged into its newly-acquired life; that a certain time is required to arrange its various organs; and that as none of the senses seem fully developed, or capable of undergoing any exertion, it can not be considered that the digestive organs are sufficiently settled to undertake their respective labors so soon. Instead, therefore, of feeding the child immediately after it is dressed, it should, for a short time, be put to its mother's breast, as before observed, to assist in the secretion of the milk; then wrapped warmly in flannel, that the light may be excluded from its eyes, and placed

in bed, where it may have an opportunity of recruiting its strength by sleep.

The milk is the birthright of the infant; for Nature has established an instinct that impels the infant to the mother's breast, and has inspired her heart with maternal love. This beautiful link in the chain of Nature should never be separated while the health of the mother will permit, for the food is congenial to the infant's stomach, and flows from that fountain of nutrition which Nature has bestowed for the preservation of her offspring.

How beautifully is the power of Nature exemplified in the case of the Venitian mother, who, seeing, with extreme agony, her infant creeping toward the edge of a precipice, suddenly unfolded her bosom to its view, and by that powerful magnet and the endearing tones of love, instantly drew the child from destruction to her trembling arms! I may likewise add the bright example of the Grecian daughter, who, by the stream from her swelling bosom, successfully fed her feeble and imprisoned father, and thus illustrated the sacred value of that bosom's balm which could, as it were, resuscitate the second childishness of age.

In relation to diet, then, the milk of the mother, when it is possible, should constitute the only food of the infant, for four or five months, if the mother's milk is healthy. Of its good quality these are the proofs: It should be secreted in sufficient quantity, possess an agreeable sweet taste, and but very slight odor or smell; its consistence should be that of cow's milk when settled; it should be faintly tinged with blue, without *streaks*, and should possess the property of coagulation or curdling, which may be proved by dropping into it a small quantity of vinegar. If the mother's breast contains milk at the fourth or fifth hour, and it should suddenly accumulate, or quickly fill the breast, the child should be applied to it, to prevent its swelling or becoming distended, which renders suckling more difficult and painful. This early suckling is more for the benefit of the mother than her infant. So soon as the infant is dressed, it should be placed to the mother's breast again and again, whether or not there be any secretion of milk, for the suction will soon bring it. This course of proceeding is clearly pointed out to us by that all-wise physician, Nature — for the secretion of milk in the breast of the mother seldom takes place until subsequent to the birth of the child.

There is also another and most powerful reason why infants should not be stuffed with gruel and other fluids, which, it is most important, should be attended to: During the growth of the child, *in utero*, a dark viscid matter is collected in the bowels, which it is necessary should be expelled previous to nourishment being conveyed

into the stomach. The fluid first secreted in the breasts of the mother, is called Colostrum; it possesses peculiar purgative properties, and is obviously intended to clear the intestinal canal of the Meconium (the dark viscid matter) accumulated in it; its fluidity also renders it the most proper food for the stomach to digest. So long as the child seems satisfied, and sleeps after it has been at the breast, it is unnecessary to have recourse to any artificial feeding; but if the secretion be so long in forming as to render it requisite to give some other nourishment, it is advisable that it be a substance as nearly as possible similar in consistence to that pointed out as the natural food. About half an hour previous, however, to the administration of the artificial nourishment, some mild aperient medicine should be given in lieu of the Colostrum — such, for instance, as a small tea-spoonful of Castor Oil. Where it is indispensable to feed an infant, a little New Milk should be warmed, and added to about a third of Water, in which a few Caraway-seeds have been boiled; it should be given in small quantities, and discontinued immediately if the mother has a sufficient supply of milk to satisfy the infant.

It is curious to observe the link or connection that exists between mother and child; for, as in the first instance, the milk is thin, so does it increase in quantity and consistence as the child advances in age and gains strength. It is obvious that this is all the nourishment requisite; and where there is no obstacle to oppose it, no other food should be given for seven or eight months. At that period, should the child be healthy, it should be accustomed to a meal once in the day, to prepare the stomach for the change of diet which must ultimately take place at the time of weaning, which should, usually, not be delayed longer than the ninth month — as, after that time, it is probably injurious both to mother and child. For this meal, a little Arrow Root is both simple and easy of digestion. Should it agree with the stomach, it should be used for a short time; then, as the digestive organs become strengthened, the Arrow Root may be changed by substituting Crackers or Bread, thoroughly boiled in water until reduced to a pulpy consistence; then mashed fine, adding a little Warm Milk, sweetened with Sugar.

It is common to regard Milk as little else than mere drink; but this is an error. Milk is really an article of solid food, being coagulated soon after it reaches the stomach. New Milk contains thirteen per cent. of digestible solids, and Skim Milk ten per cent. — that is, the former fully one half and the latter above a third of the nutriment contained in the lean part of beef and mutton. When we consider the importance of having this article pure, and how much young children are dependent upon it for food, the extent to which it is

adulterated, and the sources whence it often comes, should truly excite our attention and alarm, for the stuff sold in our cities as "Pure Milk" is generally one of the most detestable compounds that can be put into the stomach of an infant. The cows, in addition to other preparations put into the Milk, are fed with distillery slop. Under this unnatural management the cows become sick, the milk impure and unhealthy, and is frequently the cause of many serious complaints in children. How different is the Milk of to-day, in our various cities, from that which feasted the men of old; how different is the Milk from that pure and healthful article, rich and unadulterated, that may be had on any farm in our country, from the cool spring-house, with its healthy and luxurious cream floating upon the surface!

In an unadulterated state, and when taken from healthy animals, properly fed, milk is a most healthful and nutritious beverage. For thousands of years milk has constituted an important and valuable part of human sustenance, and in many countries the milk of the cow or the goat has been, and now is, the chief support of the people. Being ready prepared by Nature for food, it can at once be appropriated by the rudest savage, as well as more civilized men; hence, from the creation of the human race to the present day, it has been, among almost all nations, an article of sustenance. For Abel brought *milk* and the first fruits of his flocks as offerings to the Lord.

When flatulence, or wind, is produced by change of diet, it will be advisable to boil with the child's food a few Caraway-seeds, tied up in a small rag, which, though a simple remedy, may tend to remove this flatulence or wind.

Whatever the food may be, it is best to be given very gradually or through a bottle, for the child is then obliged to take it by suction, and will not swallow more than a sufficient quantity. What is very important, the salivary glands will become stimulated, and the saliva, or spittle, will pass from the child's mouth into the stomach, with the food, which will materially assist the digestion. It is very frequently the fact that mothers, or nurses, give *cow's milk*, or milk bought from persons who greatly adulterate this article, or supply milk of many cows mixed; this practice is greatly injurious to children; from the use of such adulterated, or *impure milk*, the infant's powers become weak, and the child grows thin, pale, and delicate; vomiting, affections of the bowels, and not unfrequently convulsions and fits are the results; their bellies grow large; the skin is more or less covered with eruptions; they are restless, feverish, and ultimately pine and fail away to mere skeletons, and die. Children brought up in this manner, and whose health is sinking under such treatment, seldom

retain food long upon their stomachs, and are subject to constant looseness of the bowels.

It will be evident from this but too true picture, that such a mode of rearing children is incompatible with a continuance of health, and that it will not only be necessary now to resort to medical means to subdue these disorders of the stomach, bowels, and skin, but also to renounce this plan of domestic treatment, and to substitute for it the simplest aliment, should any other than the mother's milk be necessary; taking care, at the same time, to administer that aliment at stated periods and in small quantities.

To enable the digestive powers to recover their tone, and the infant to regain its health, a child of three or four months old should not be put to the breast oftener than five or six times during the twenty-four hours. It is important, also, to interpose such an interval between the meals as to allow time for the food previously administered to be digested.

The most mild and bland foods, such as light Sago, Rice, Tapioca, and Arrow Root, etc., should form the nourishment for children from the age of nine months to the end of the second year, when the first dentition will, in ordinary cases, have been completed. The author has often seen children of but twelve months old, and having but the four front teeth, biting and attempting to swallow pieces of meat. Upon addressing the mother on the impropriety of such a proceeding, the answer has generally been, "Oh! the little dear, he enjoys it so; *it keeps him quiet;* he has got *four* teeth, and it can't hurt him." Little does the mother think what seeds of destruction and disease she is, perhaps, sowing in the child that might otherwise have proved her solace, and even support, in the decline of her life. Let it, then, be distinctly understood, that children should not have meat of any kind given them to masticate, until they are provided with the proper instruments which Nature has most wisely ordained they shall be furnished with, when the assimilating and other organs are in a sufficiently advanced state to begin and healthily carry on digestion. This time is about the seventh or eighth year, when the second dentition is completed.

Their food in this latter period, viz.: from the second to the seventh year, should consist, as before mentioned, of light food, such as Bread, Milk, Potatoes, nourishing Soups, and such easily digestible food as will be found sufficient to satisfy and appease a child's appetite. If administered at proper and regular times and in moderate quantities, you will have a healthy child, and the physician will seldom have occasion to visit or prescribe.

2d. Of Nursing.—There are many instances where a mother is hindered or prevented from suckling her infant, from ill health, or extreme delicacy of constitution, or from a failure of milk, or other physical causes rendering it entirely impracticable. In such cases it is indispensably necessary to hire a wet nurse. To bring up a child by hand is a task of great difficulty, and should never be attempted when it is in the power of the parents to obtain a wet nurse. In large cities the risk is much greater than in the country, where the opportunity of obtaining fresh and pure milk is not difficult, as before described.

In selecting a wet nurse, let me impress on your mind the necessity of obtaining a woman in good health, one that has a proper supply of good milk, affectionate and kind in her disposition, cleanly in her habits, and free from intemperance; her age between twenty and thirty years, and whose confinement took place about the same time as that of the mother whose child is to be suckled. A strong and healthy nurse will be of great benefit to the child, in aiding it to a vigorous constitution. In the choice of a wet nurse, we can not hope to discover, however, all these qualities, but must look to the important point—a woman in good health.

If wet nursing has been commenced, and the infant appears to dwindle, or to be disordered, the nurse should be changed, as the mischief may arise from her milk, and not from disorder of the infant from any other cause. The advice which I have written for the regulation of the suckling mother will likewise apply to the wet nurse.

When the infant is to be brought up by hand, which is called dry nursing, great care must be used to render this mode successful by keeping the infant and its nurse almost always under the immediate direction of its mother, as it is all essential both to the mode of administering the food, as well as its kind or quality. The proper instrument for this purpose is a suckling-bottle, which may be purchased at any drug store. In its use, however, great cleanliness must be used, by scalding it out frequently; on the failure of this caution, portions of the curdled milk or the sour food will be left in the bottle, or will adhere to the neck or teat and sour the fresh milk. Of this species of artificial food, and which most resembles the milk of the mother, is the following, which should be used from one cow: Fresh Cow's Milk, $\frac{2}{3}$; Spring or Pure Water, $\frac{1}{3}$; well sweetened with Loaf Sugar, which is the least liable to acidify and cloy. The milk so prepared should be made lukewarm, or as near as possible to woman's milk. If necessary to preserve it by boiling, it should be quickly

cooled in cold water, which will prevent its losing its nutritive properties.

The periods of feeding should not differ from those observed in suckling from the breast. When the child has cut two of its front teeth, the consistence and nutrition or strength of its food may be a little increased, by adding to the Milk, Arrow Root, Bread, or Rice Flour, or Sago, or other simple farinaceous substances. The nurse will soon discover that kind of food which is best adapted to the stomach of the child, as that rejected will be vomited up, or cause flatulence or apparent distress after being swallowed; either of these consequences will render a change necessary in the food of the infant.

DRESS OF CHILDREN.

MANY of the most serious consequences are entailed on the human race by bad management in infancy, and not unfrequently many diseases may be attributed to the mode of dress adopted by parents and nurses for their children. Mankind in early years is impatient of restraint, through the restless activity incident to youth, which makes it delight to be in perpetual motion, and to see every thing around it. See the happiness and delight a child expresses, by its features, every time it is undressed and rubbed with a soft hand; observe the pleasure it experiences as soon as it is taken out of the fetters in which it is bound. It instantly ceases crying; no sooner is it undressed, than it begins to smile, and to show signs of joy; even though it should be hungry now, it proves, by its joy and its movements, that it wanted liberty much more than the breast. Bandage it up again, it becomes uneasy, its countenance is sad, and its cries are renewed. It should be borne in mind, that the sole object of clothing a child is for warmth, and not for the purpose of giving it support, as is generally supposed. Upon the first sight of a new-born infant, every one is struck with the idea of its weakness and helplessness; it is designed to be weak and tender in its infant state, as indeed is every similar object. Take a survey of Nature, from the first opening leaves of the vernal flower, or the more delicate foliage of the sensitive plant, to the young lion or the elephant; they are all, in their several orders, proportionately weak, and can not exist without some exterior support. But they have need of nothing but what Nature has prepared for them. If seed be cast into a proper soil, it wants only the surrounding elements to insure vigor and maturity.

So, if the tender infant be born of healthy parents, and at its full time, it is usually sufficiently strong. Proper food and nursing are the elements whose fostering influence it requires; if it have these, it will need nothing more.

It is true, the new-born infant is very weak; but is it, therefore, to be tightly rolled, under the idea of supporting it, and giving it strength? A child is nothing more than a mass of tender vessels, through which food is to pass, and when digested, be distributed throughout the body; these vessels are, therefore, soft and flexible, capable of yielding to the impetus of their contents. Hence, we can not but perceive how injurious any great pressure must be to so delicate a frame. Nurses often seem to feel it to be a part of their duty to bind infants up with thick rollers, flannels, and wrappers, all ingeniously tightened and fastened, with so many strings and pins, that you feel amazed when you see how adroitly they succeed in placing the poor little child in confinement and misery.

Looseness is very important in an infant's dress; there should be a free circulation of air between the skin and the clothes, as well as a slight friction upon the surface. All confinement distresses, and when it amounts to tightness, it may, and does, frequently occasion deformity before the evil is suspected. Full room should be allowed for the increase which is continually and rapidly going on. For this reason every part should be fastened with strings; and, in tying these strings, the greatest care should be taken not to draw them too tight. And it is proper, after the strings have been tied, particularly those under the chin and round the waist, to ascertain by feeling with the finger that the dress is not drawn too tight. Pins should be used as seldom as possible. The growth of children is so rapid, it is proper to examine their clothing frequently, as a few weeks will make a great difference in relation to the size, and the pressure or restraint is often the cause of much crying and fretfulness; it is, therefore, proper that children's dresses should be made so that they may be easily enlarged, particularly round the waist, throat, and arm-holes, and across the chest and back. Bandages round the head, or tight caps, or any thing which compresses the brain, should be strictly avoided. Many instances of Idiocy, Fits and Deformity, are owing to tight bandages; not unfrequently infants are very restless at night, owing to tight night clothes.

The more easily the dress can be put on and off, the better and more comfortable for the child; there should be no other fashion than what is dictated by convenience and comfort. Long clothing or skirts confine the infant and prevent the activity of the limbs, so essential to a free circulation of the blood and advancement of

PAINTED BY F. ROCHARD

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THE WIFE.

growth Loose gowns, fastening in front, are therefore preferable to frocks, for two or three months, however less fashionable. All unnecessary stiff clothing should be avoided; every thing which surrounds the body of an infant should be soft, and of a yielding nature, so as to prevent any painful pressure upon the muscles or bones, or excoriation or chafing of the skin. Every article of the child's dress should be made and arranged — regardless of fashion — so as to be adapted to its comfort and health; this will consist principally in guarding against the variations of external temperature, in preserving a genial warmth for the maintenance of the various functions, and in protecting the body and limbs against external injuries. Pride and Fashion must always be laid aside when they interrupt the comfort or health of the child. This, however, unfortunately, is not the case with some foolish mothers, who would rather risk the life of their infant, than deviate from the last style of dress which Madame Humbug has lately received from Paris.

Were it possible for us to visit our fashionable circles, we should behold the embroidered lace, worked ruffles, and stiffly starched linen, scratching and chafing the tender skin of the poor infant, and perhaps some important regions of the body entirely unclothed and exposed, and others superabundantly clad. Amidst this empty pride, every consideration of comfort, and the health of the child, is entirely overlooked. Probably a course nearly opposite to this is pursued by those filling the humbler walks of life, whose means are not adequate to the ever-varying demands of Fashion, but who have the satisfaction of seeing their children in the enjoyment of uninterrupted health and vigor of constitution, by pursuing a course which their circumstances will not permit them to deviate from. This is usually the cause that health, in particular, is the blessing of the poor, while the rich are more generally the subjects of disease.

One of the most important parts of an infant's clothing is a soft flannel bandage, commonly called the belly-band, which is intended to give support to the abdomen or belly, particularly the navel. It likewise supports the internal covering of the intestines, and prevents the child from any distention, or a big belly. In putting on this support or bandage, you must recollect that between support and pressure there is a distinction: the first is very important to health; the second is the cause of many serious diseases, such as Rupture, which is owing to neglect or ignorance in putting the bandage on properly, so as to avoid pressure. Besides, the action of the bowels is impeded by this compression, occasioning great pain and constipation or costiveness. It should be taken off morning and night, and put on smooth and carefully. A clean one ought to be put on every

two or three days, as it is apt to get wet and rumpled, and unfit for use till washed and ironed. With some children I have found it necessary to use it for many months, to prevent an enlargement of the abdomen or belly, and delicate children are sustained by it in their attempts to sit up.

As regards the quality of clothing best suited to the infant, flannel is, perhaps, more extensively and advantageously used than any other article of which clothing for children is made. Public sentiment, as much as it is perverted on many subjects connected with the management of infants, appears to be right on this. The superiority of flannel to other substances used, consists: 1st. In its protecting power against sudden reduction of temperature — that is, its non-conducting power prevents the natural heat escaping from the surface of the body when the surrounding temperature is materially lower; wool being a better non-conductor of caloric than flax or cotton, is consequently better adapted to the purposes of wearing in cold or variable weather. 2d. In guarding the body against the cooling effects of evaporation. When the surface of the body is bedewed with perspiration, the flannel prevents too rapid an escape of the warmth from the body; and as it passes off gradually, the moisture is absorbed by the flannel, whence it evaporates imperceptibly. Thus, it is perceived, the temperature of the body can be but little affected during the process of "drying up of the sweat," as it is called, which must be otherwise were linen or muslin employed in its stead, because they conduct off the heat much more rapidly, and absorb the moisture with less facility; hence a cold dampness must, of course, pervade the surface of the body during the drying process, and hence the advantage of flannel next to the skin. 3d. In producing over the surface of the body a healthful and "agreeable irritation," by means of which an insensible perspiration is advantageously promoted — a function indispensable to the health of the child. Its use, in this respect, approaches in effect that of the flesh-brush; by producing this grateful action upon the skin, it equalizes the circulation; the blood is being constantly invited to the surface, which lessens the liability to congestion of the internal organs, by its being thrown upon them in too great abundance.

From these considerations it is evident that flannel next to the skin, in cold and variable seasons, not only adds to the comfort, but also exerts a salutary influence on the health of the child — so much so, that its adoption can not but be considered an important, if not an indispensable, item in the successful management of the infant.

Flannel is to be preferred for children; it keeps the body in that degree of heat which is most agreeable, as well as most suitable, to

the functions and actions of health. The perspiration is necessarily increased; the matter perspired is conveyed through the flannel to the atmosphere, and the skin remains dry, warm, and comfortable. Flannel co-operates with the powers of generating heat in living systems, and thus constantly preserves us in that temperature which is most pleasurable, as well as most natural and beneficial.

Dr. Dewees, late Professor of Midwifery, at Philadelphia, says: "There is a very common error upon the subject of flannel, which deserves to be corrected, namely: that it can remain longer dirty, without doing mischief by its filth, than any other substance; but in this there is no truth — flannel, from its texture, is capable of absorbing a great deal of fluid, which it will retain so long, if permitted, as to allow a fermentative process to go on, and gives rise to the extrication of some deleterious gases; therefore flannel should not be worn even so long, on this very account, as linen substances."

The flannel should always be of the white kind, where the circumstances of the parents will permit it — not that the first cost of the white need be greater than that of the colored, but because it will, for the sake of the eye, require to be more frequently changed, as it will more readily show any dirt that may attach to it; but, for this very reason it should be employed whenever it be practicable. Another reason may also be assigned: the white can always be procured of a finer quality, which is always desirable.

The principal articles of clothing are to be made of fine flannel; these generally are the under-clothes. Fashion, caprice, or fortune may regulate the rest, provided the garments for the feet and legs be excepted.

We are confident that if more attention were bestowed on the real necessities and wants of children in suitable clothing, and the system preserved from sudden changes, infantile suffering would be greatly diminished, to say nothing of the long list of chronic complaints by which it may be tortured in after years, and the whole life doomed to wretchedness and misery, by fashion and neglect to preserve a uniform warmth over the whole body and limbs — a legitimate means of insuring health and comfort to the child.

CLEANLINESS.

THIS is very important in relation to the health of children, and a strict adherence to cleanliness will be the means of warding off many diseases, without the aid of a single dose of medicine. A pro-

pensity exists to consider disease as an extraneous something thrust into the system, which must be expelled by force or active remedies, before health can be restored, and with which the mode of management has little or nothing to do; whereas, disease is nothing more than an aberration from the regular mode of action of the organization, generally caused by errors in diet, and often removed by a right course and simple remedies. In my opinion the habit of giving medicine to children for every little uneasiness, is wrong. The evil is, in many instances, aggravated, and instead of being cured, many children are thus destroyed by medicine, who would have been restored to health by bathing, simple diet, and well-directed care.

As the skin is the principal regulator of temperature and the medium by which the balance of the general functions is preserved, it is manifest that its state is of such vast importance, that the means of preserving its health can not be too strictly attended to. Different opinions have been expressed as to the temperature of the water in which a new-born infant should be washed. Cold water, in my opinion, should never be used. Reason and experience teach us, that to plunge a newly-born infant into an element so diametrically opposite to that in which its previous existence has been passed, is necessarily to expose it to dangers of the most serious character. It is contrary to the general rules of Nature; for as time is required to perfect all things submitted to her laws, and as the uses of the senses and limbs are all gradually developed, so must it be with the means employed to render an infant hardy and capable of bearing the Cold Bath. All changes should be gradual. Let it be first accustomed to breathe the surrounding air; then let its tender frame be so far inured to its new life, as to have acquired some innate heat; then begin to use by degrees cold water, first agreeably warm, then tepid, and after using this bath for some time, then lessen the temperature until the infant becomes accustomed to it. The child should be thoroughly cleansed, and then, if in winter, or damp weather, well rubbed before the fire, to increase the circulation, taking the greatest care to avoid exposure, which might produce cold, running at the nose, inflammation of the eyes, etc. If the child is healthy and the weather mild, after the first week or ten days, the warmth of the water may be gradually lessened, till at last, if it appears to agree with it, the cold water may be employed. Frequent bathing is not only conducive to cleanliness, but it imparts vigor or strength to the muscles and nerves, and permanently establishes a healthy constitution, both of body and mind.

The Cold Bath is not only beneficial to children in health, but to those that are sickly, especially those who are afflicted with Rickets.

This complaint has been frequently cured by the Cold Bath; it may be used three or four times a week; a sudden dip, twice repeated each time of using the bath, will be sufficient. It will be proper to begin the practice of dipping the child in warm weather, and continue it through every season after. When the child is delicate and weakly, always take care and use the Cold Bath gradually; if the shock appears too powerful for the constitution, then substitute sponging the body, or bathing it with salt and water, lukewarm, or cold; this will be similar to sea-bathing, which is highly beneficial where there is a tendency to impurities of blood or scrofula.

An infant usually cries considerable while washing and dressing. When not violent, and it continues to cry, it is more beneficial, by giving exercise to the lungs, voice, and respiratory organs, than perhaps any other exercise, being so ordered by Nature. As they increase in years and acquire other powers, crying is diminished. Tenderness and soothing kindness are, however, in all such cases necessary; for when roughly handled, the sight of water and other preparations produce fear and suffering, but by persuasion and pains the child will regard washing, after a short time, as a source of comfort. Amuse it, then, with a playful, gentle tone of voice, and every painful dread will fade away, and habit will establish it rather as an amusement than otherwise. As soon as children acquire the power of voluntary motion, they necessarily make themselves dirty, and it then becomes essential for their health, to wash them frequently. The pleasure in washing, or accustoming them to it, greatly depends upon the manner in which they are handled; if roughly pulled and jerked about, with angry feelings, and washed with no regard to comfort, tears, crying, and dislike, will naturally accompany the efforts of the mother or nurse to keep them clean.

Immediately after bathing, the child should be well dried, made comfortably warm, and if it is disposed to sleep, allow it to do so; when dressed, permit it to have exercise. Children should not be bathed immediatly after a meal. Weakly children, using the Cold Bath, should wear flannel next to the skin. Although the Warm Bath is rarely employed, except in disease, yet both the Cold and the Warm Baths are used as remedies against eruptions of the skin, by washing off those saline and acrid particles which are left upon it by perspiration.

In all chafing, which is more or less frequent, from the clothes necessarily used, the use of Cold Water is preferable to any other remedy; after which grease the parts with Mutton Suet.

Diseases are frequently engendered or produced by a neglect of proper cleanliness; from not airing beds, blankets, etc., and not un-

frequently closets and drawers are the receptacles of many articles of filth, which ought to be removed.

The practice of observing cleanliness with children is not only essential to comfort and health, but will be the means of saving you from many a doctor's bill, and will likewise so establish the constitutions of your children that they will require but little medicine. Every kind of clothing should be aired before a fire previous to being put on; and all flannel garments, in particular, require to be carefully dried in this manner. Either damp linen or flannel, dried upon the person, must, of necessity, produce evil consequences, especially where, as with infants, there is little exercise. The quantity of clean linen they require, makes caution upon this point still more important.

PURE AIR.

AS nervous sensibility predominates in early life, and its excess forms an ingredient in almost every infantile disease, it is of the utmost importance, in the management of infants, to pay attention to all those circumstances and agents which tend to strengthen and invigorate the nervous system. Of these, *pure air* is, perhaps, of equal importance with wholesome food. When a child, pent up in the confined and impure air of our cities, has become emaciated by Teething, and perhaps brought to death's door by Cholera Infantum, it is surprising to see with what rapidity it is restored on removal to the pure air of the country. This seems to be a specific for nearly all the disorders which arise from Teething. Accordingly, all our writers on Diseases of Children, recommend this as indispensable, and the only remedy, almost, which is needed. Connected with improper food, impure air is the great cause of the excessive infant mortality in our American cities. This is shown by the fact, that a large proportion of the deaths under five years, occur among the children of the poor, who are crowded together in filthy, ill-ventilated apartments, and who pay no regard to personal cleanliness. Cooped up in small rooms, with a coal-stove in the center, on which all the cooking is done for the family, thus breathing an atmosphere reeking with all kinds of impurity, and which is never renovated, how is it possible for a young infant, under such circumstances, to survive the process of Teething; or if thus fortunate, to go safely through those numerous disorders which, at some period, sooner or later, most children have to experience? The sulphurated hydrogen gas which

escapes from our coal, is exerting a most deadly influence upon the health and lives of infants and young children in all our large cities, and, we believe, is one of the causes of the gradual increase of mortality among this class of our population.

We have, within our own practice, witnessed several instances where the death of the child was manifestly owing to this cause. In a poor family, to which we were lately summoned on account of convulsions occurring in one of the children, we found the air of the apartment absolutely irrespirable from this cause, and every one of the family, consisting of eight persons, complaining of faintness, giddiness, want of appetite, and numerous other symptoms, which we might expect in such a case. The removal of the stove and the substitution of a wood fire, sufficed for their speedy restoration to health.

The importance of the free ventilation of nurseries, and the sleeping apartments of children, is not sufficiently appreciated. There is a great difficulty, we are aware, owing to the construction of our houses, in preserving the temperature at a proper hight in winter, and yet providing for suitable ventilation ; but, if it can not otherwise be done, so highly do we estimate the value of pure, fresh air by the young, we should, as a general rule, recommend free ventilation, even at the expense of lowering the temperature. Of the two evils, the latter is the least.

Nature requires and provides that the tender frame should be nourished with food, air, warmth, and light, sleep and exercise. All these being given to it, the soft bones will grow hard and the weak muscles firm ; the eyes will become strong to see, and the ear to hear ; the different portions of the brain to feel, apprehend, think, form purposes, and cause action, till the helpless infant becomes a self-acting child, and is on the way to become a rational man. What the parents have to do, is to take care that the babe has the best food, air, warmth, and light, sleep and exercise.

Moreover, the organs of respiration will continue healthy or become diseased, in accordance with the nature of the atmosphere, or as the air is pure or impure; and as they become deranged, the blood becomes vitiated just in proportion as the air becomes impure. Air that has been frequently breathed, being deprived of its oxygen and charged with carbon, is thus rendered unfit for breathing. This should always be attended to, taking care to admit fresh air, and purify it in those apartments which are inhabited by children. Children evince uneasiness by crying or fretfulness. A constant recurrence of irritating causes render them habitually fretful ; they are, therefore, injured morally as well as physically, by breathing an

impure atmosphere. The mother, or nurse, being subjected to the same influences, her temper and nervous system become affected by the same cause, and increasing irritability prevails, destructive of true maternal and filial feeling.

As long as such ignorance exists, we need not wonder at the abuses which are witnessed in relation to the medical treatment of infants and young children. Under judicious treatment, disease will rarely prove fatal to children, especially where their previous management in relation to fresh air, diet, exercise, clothing, etc., has been proper. The progress and result of infantile diseases are, therefore, in a great degree, under the maternal control. How important, then, that that control be guided by wisdom and knowledge!

Considering the defective food and clothing of the children of the poor, and the condition of their dwellings, it is evident that much of the health which they possess is owing to their spending the greater part of their time, during the day, in the open air. This fact, in itself, ought to impress upon all mothers the propriety of preserving a constant freshness and purity of atmosphere in the apartments of their children; at the same time, however, taking care to prevent the rushing of cold draughts from the doors and windows, as such an imprudent course may produce Colds, Croup, and various other diseases quite as dangerous as those which may arise from the want of ventilation or pure air. There are many important considerations connected with pure air, which require constant attention, and more particularly where there are children. Among these may be mentioned the instant removal of dirty linen, and all other offensive matter, and the thorough drying and airing of clothes, bedding, etc. This is not only essential to health, but has a great influence on morals also, for we are greatly the creatures of habit.

Dirt and Indelicacy are twin sisters. A disregard for the decencies of life is too often a step toward indifference to its virtues. For these reasons, as well as for security to health, *habits of cleanliness and delicacy should be formed early.* Children acquire these habits, or disregard them, in proportion as the manners of those associated with them are indifferent or careful. When a systematic and proper attention is paid to their personal necessities, children soon feel the influence of such habits, though they may neither reason nor reflect upon them. A sense of comfort and self-respect is thus indelibly fixed upon them; and, from custom, a sense of propriety eventually becomes a part of their character. It is, indeed, a rule which admits of general application, "Train up a child in the way he should go, and when he is old he will not depart from it." When the trials of life come, how his heart flows out in the loved remembrance of the

dear mother whose fondness and instructions are indelibly impressed upon his mind!

Pure air being the great promoter of healthy action in all the body, but especially in the liver, lungs, and skin, therefore, is more conducive to the vigorous performance of the digestive functions, and also those of the brain. But in damp or cold weather, it is, of course, essential to be guarded against every change or exposure, as this is most frequently the cause of Croup, Colds, Fever, etc., in children. The effect of deficiency of pure air, is an ever burning heat of the skin, followed by profuse perspiration, thirst, hurried breathing, restlessness, agitation, palpitation of the heart, fainting, and fever. A healthy man spoils, by breathing, about fifty-seven hogsheads of fresh air every day. All living bodies must breathe oxygen or die. All the animal functions are maintained by the incessant play of affinities between the atmosphere and the organs, and all are conveyed directly to the blood. To show you the importance of a fresh supply of air, we breathe about twenty times a minute —

20 distinct and separate impulses in 1 minute;
1,200 in 1 hour;
28,800 in every 24 hours.*

See the effect this must have in making foul, confined air, and how much health and life depend on a copious supply of fresh air; how, then, can people overlook this plain fact, that to live healthily we must have a full supply of pure air! There can be no doubt that the majority of attacks of fever so frequent among the poor, are produced by want of free ventilation; their sleeping apartments generally answer all the purposes of cooking, washing, and other domestic purposes; crowded closely together, especially in the winter season, excluding much pure air, they try by a stove to obtain warmth, which poverty forbids them to procure by a cheerful and ventilating fire. In proportion to the vitiation of the air by the breath, and by exhalations from the body, it becomes capable of receiving and conveying the infectious seeds of disease. Thus Typhoid Fever is often produced, and communicated wherever the ventilation is deficient. Thus has Ignorance often prepared a soil for the growth of Pestilence, in every age and every clime. Not many years ago we received a terrible proof of the danger of a want of supply of fresh air, by the suffocation of seventy poor Irishmen, women, and children, in the fore-cabin of a steamer between Dublin and Liverpool. Neither the captain or mate reflected that by closing and nailing up the only

* The reader is referred to the complete discussion upon "Ventilation, Pure Air," etc., given in the Treatise near the close of the volume, under the head of "Domestic and Sanitary Economy."

entrance of air to the cabin, they as effectually killed the seventy fathers, mothers, and children, as if each had been cast into the sea. They all died in a few minutes, and the only excuse for the dreadful deed was ignorance or thoughtlessness.

The voice of Nature, and the neglect of her laws, teach us, that no truth relating to our nature can be neglected with impunity. Whatever depresses the vital energies, predisposes to the reception of disease. Whatever tends to promote the general vigor and orderly operations of life, tends, from infancy to manhood, to fortify and strengthen the whole system against all external as well as internal maladies.

SLEEP OF INFANTS.

THE repose of the muscular system is never completed, except by sleep. With this "sweet restorer" the infant's system is invigorated, strengthened, and the organism bestowed by Nature confirmed by growth, strength and health. Hercules, tired of his toils, and the infant, weary of his play, rest alike in their helplessness. The Lord of life, and of death, gently, and with equal hand, will close their eyelids, and with the breath of life, when morning dawns, refresh all their faculties. Half our days from infancy to manhood are passed in the shadow of death. Sleep, however, is only so far like death, that the mind is withdrawn from the outward senses, by an influence beyond our control, and instead of death, we experience only in sleep the renovation of the powers by which the soul operates in the body. The quantity of sleep required by an infant or grown person must depend greatly on the facility with which the power of the nervous system is restored, and this is determined by conditions utterly beyond the power of research or science to discover.

It is remarkable that young and growing animals need most sleep, and that the soundest sleep occurs before mental consciousness is evinced; as for instance, in new-born infants, the child partakes of instinct so fully, that there is no necessity to promote sleep, but only to prevent its disturbance. Physical comfort is all that is needed; and this is to be obtained by whatever secures health — namely, sleep, proper diet, warmth, cleanliness, and pure air.

For the first few weeks, noise seldom disturbs an infant; this is owing to the sense of hearing being dull. Habit, however, has a powerful influence; therefore, sleeping in the arms, or on the lap, should as much as possible be avoided. A child accustomed to this

indulgence, will not rest long in its bed. The early habit of putting a child to bed awake, and leaving it with necessary caution and watchfulness, will eventually save a mother much fatigue, and so form habits from the beginning that will eventually save much inconvenience.

On laying an infant down, on the bed, or in the cradle, it should be wrapped up comfortably warm, so that the feet and hands are not exposed, the body being laid in a straight position, and the head and shoulders being raised a little by the pillow. Blankets are better than sheets. The covering should be so arranged that, while there is sufficient space to breathe freely, the face is not kept too warm. A change of posture is likewise necessary, so that it may not be cramped by lying too long in one position.

It is better always to quiet the infant by rocking gently, patting it on the back, when restless or crying, if not long asleep. If these means fail, it should be taken out of bed, and quieted in the arms. An infant ought never to be kept awake when fatigued, under the impression that it will rest better at night. Over fatigue produces general irritability, pain in the limbs, fretfulness and restlessness.

It is best that infants should sleep alone, for the air of a bed in which one or more grown persons are sleeping, becomes impure; the child inhales the exhalations produced by sleep, and is in danger of being overlaid — an accident by no means uncommon.

The usual position of an infant should be nearly horizontal. In the perpendicular or sitting posture, the soft and flexible condition of the bones of the spine, then scarcely more than cartilage, allows them to be readily bent, or to project in an angular form — an injury which, if not speedily relieved, leads to permanent distortion. This distortion is sometimes produced by the mother or nurse violently shaking the infant during the cartilaginous condition of the bones; an error in nursing which, like the violent rocking of a cradle or chair, or swinging, may cause disorder of the brain.

As I have before remarked, with regard to the custom of nursing infants too constantly on the lap, the nurse often expands or opens her knees, which forms a hollow, the infant thus sinks into this cavity or space, by which its spine is consequently *curved* outward, a form which, by constant bending, becomes permanent, and deforms the child by giving it a *humpback*.

In warm weather a quilt or mattress laid on the floor, and the child allowed to exercise the limbs, and roll to and fro, will be very beneficial. By this custom, the child will be highly gratified, and the freedom will make it healthy and robust. A mattress is the best bed

for children. The feather bed so confines the limbs as to prevent that lively motion, and free circulation of the blood, which are conducive to perfect health. Weakness also will ensue from the continual perspiration which a bed of feathers induces, and the infant's lungs may be injured, should it have any predisposition this way. We should, therefore, remember, that during sleep the infant should be strictly attended to, so that the temperature of the body may be regulated carefully and kept as warm as necessary. Extremes of heat and cold are highly prejudicial to the child, and not unfrequently the covering being displaced during sleep, will cause exposure, which may produce serious diseases, as Croup, etc.

Infants can not sleep too long. To awake them with a noise, or in a sudden manner, is extremely improper. Suddenly exposing them to a glaring light, lays a sure foundation for weak eyes. Never administer spirits or drops to make the infant sleep, if it be possible to avoid it. Let their diet, as they grow, be simple, and the more simple, the better will they increase in health and thrive. A wakeful or a fretful child is a great trial to a mother's patience, and every arrangement that circumstances will permit, as regular bathing, nursing, and exercise, should be used, which simple treatment, by degrees, will gradually accustom it to sleep quietly. Any harsh or impetuous treatment, either by scolding or slapping, is extremely improper.

In training young children, it is to be remembered that early impressions become indelibly fixed; therefore, the habit of regular nursing, and hours of being put to bed, or those which relate to sleep, should be established. Children are naturally early risers; the morning sun awakes them. This disposition should always be encouraged. They should be sent early to bed, and immediately, on waking at a proper hour, should be dressed and washed, as lying awake for a long time in the morning induces languor and other evils.

The *motive* powers of a child should be allowed to find, as it were, their own level. It should be permitted to gradually commence creeping, which generally is begun about the sixth or seventh month. Great care must be observed at the time when it first attempts to raise upon its knees, or to climb up the legs of a chair, or the table, lest it be allowed to remain too long in an upright position, especially if the body and head be disproportionately large and heavy, as curvature of the spine or backbone, or long bones of the legs, and not unfrequently a disease called Rickets may be produced thereby.

Children should be kept, during sleep, as separate as possible, as their dispositions to slumber are seldom simultaneous. The restless

ness of one will prevent the sleep of the other, and sleeplessness is a frequent cause of fever. In warm weather, too, one will often throw off the clothes when the other is in a state of comparative chilliness, in which condition an exposure to increased cold may be most prejudicial to the child, and induce disorder.

Calm and long-continued sleep is a favorable symptom, and ought to be cherished rather than prevented during the whole period of infancy. But when the child starts, or jerks in sleep, attended with sudden, loud cries, as in a fright, or a low moaning noise, it is an evidence that it is not well, and should be at once attended to; the difficulty may arise from error in diet, dress, slight exposure, or colic; from sleeping too long in one position, in consequence of which the sleep becomes more or less disturbed, or a wrong position of the body may impede some important functional operations, as digestion, respiration, circulation, etc.

In closing, we must urge strict attention to the child's sleeping clothes, needful for health and comfort as well as preventing extensive excoriations of the groins, chafing or creases, troublesome sores, boils, and inflammations, which give a great deal of pain, disturb sleep, and ultimately may produce fever. I allude especially, in this matter, to permitting an infant to go to sleep wet or filthy, and allowing it to continue in this loathsome condition for a whole night, which can not but render its sleep unrefreshing, at the same time suffering it to inhale this odious effluvia or unwholesome scent. I have frequently seen, in my practice, the cradle-bed so saturated with urine, and but partially dried, again and again, that it became intolerable to my olfactories, and the poor babe was obliged to breathe constantly this dreadful and offensive smell.

I trust these observations will be so impressed upon the mind of the mother, that they will not be neglected by those who have any regard for the cleanliness and comfort of the helpless infant. But there are many, nevertheless, who are remarkably particular about the appearance of the child when awake, but when asleep, unobserved, permit, from carelessness, the infant to remain in this injurious situation, until the complaints before mentioned take place. The infant, then, should be perfectly dry and clean upon going to sleep, and during its slumbers should be frequently examined. Upon discovering its situation to require changing, it should be done at once; it is far better to subject it to the slight disturbance of changing, than to allow it to remain for hours thus uncomfortably situated. If the child should cry from this disturbance, rub its back and limbs with the open hand; this is a very soothing and grateful remedy to the

little infant, and is enjoyed with much satisfaction. In fact, protracted restlessness, or even crying, may frequently be quieted by this simple, though efficient means.

MANAGEMENT OF CHILDREN.

PARENTS must give good example and be reverent in deportment in the presence of their children. All those instances of charity which usually produce affection — sweetness of conversation, affability, frequent admonition — all significations of love and tenderness, care and watchfulness, must be expressed toward children, that they may look upon their parents as friends and protectors, their defence and sanctuary, their treasure and their guide.

It is usual to attempt to manage children either by corporeal punishment, or by rewards addressed to the senses, or by words alone. There is one other means of government, the power and importance of which are seldom regarded. I refer to the human voice. A blow may be inflicted on a child, accompanied by words so uttered as entirely to counteract the intended effect. Or the parent may use language, in the correction of a child, not objectionable in itself, yet spoken in a tone which more than defeats its influence. We are by no means aware of the power of the voice in swaying the feelings of the soul. The anecdote of a good lady, in regard to her minister's sermons, is to the point. She heard a discourse from him which pleased her exceedingly, and she expressed to a friend the hope that he would preach it again. "Perhaps," said her friend in reply, "he may print it." "Ah!" said she, "he could not print it in the holy tone with which he delivered it — that soft, persuasive voice!"

There is a tone in our intercourse with children which may be among the most efficient aids in their education. Let any one endeavor to recall the image of a fond mother, long since departed to her rest, her sweet smile and ever bright countenance are brought vividly to recollection; so, also, is her voice. Blessed is that parent who is endowed with a pleasing utterance. What is that which lulls the infant to repose? It is no array of mere words. There is no charm to the untaught one, in letters, syllables, and sentences. It is the sound that strikes its little ear that soothes and composes the little one to sleep. A few notes, however unskillfully arranged, if uttered in a soft tone, are found to possess magic influence. Think ye that this influence is confined to the cradle? No, it is diffused over every

age, and ceases not while the child retains a remembrance of the parental roof.

While, then, I would advise the mother to the culture of a pleasant voice, I would warn her of the evils of addressing her children harshly. Out of a kind heart come naturally kind feelings. She who would train up her family in the sweet spirit of love, can succeed best, and most enduringly of all, by cherishing such sentiments as shall seek their own unbidden expression in gentle, yet all-powerful tones. She who speaks to her son harshly, does but give to his conduct the sanction of her own example. She pours oil on the already raging flame. In the pressure of duty, we are all liable to utter ourselves hastily to our children. Perhaps a threat is expressed in a loud and irritating tone. Instead of allaying the passions of the child, it serves to increase them. Every fretful expression awakens in him the same spirit that produced it: so does a pleasant voice call up agreeable feelings. Whatever disposition, therefore, we would encourage in a child, the same we should manifest in the tone with which we address them. There is nothing more desirable in a daughter than intelligence joined to a gentle spirit. The mind is fashioned and furnished principally at school, but the character of the affections is derived chiefly from home influences.

How inestimable is the confidence of that mother in producing fine feelings in the bosoms of her children, who never permits herself to speak to them with a loud voice, or in harsh, unkind tones! Especially at night, when they are about to retire, their hearts should be melted and molded with voices of kindness, that they may go to their slumbers with thoughts of love, whispering words of peace to their souls. Piety, though last named, is of the greatest importance; for while there are duties to be performed toward each other, there are also others which we owe to our Creator, which should never be neglected or deferred — the performance of which will prepare them to act aright under every change, and enable them to bear up under all the ills which flesh is heir to, as well as cheer and comfort the heart while passing through the vicissitudes of life.

In the management of children, there must be an even, steady, firm, and temperate treatment, accompanied by a disposition of mind so much master of itself as never to yield to passion, but always to be governed by calm judgment. Persevering, yet gentle firmness, begun in infancy and practiced daily, establishes discipline, insures obedience, and almost entirely prevents the necessity of punishment of any kind; consequently it is by far the easiest and most agreeable course for the parents, as well as the most beneficial for the child. On the other hand, the gratification of the child's will, encouraged

by frequent indulgence of its improper desires, associates the idea of happiness with such gratification, and of misery with disappointments. Self-will grows rapidly; a capricious humor is the necessary consequence, and the product is that pest of pests, a "spoiled child." But, again, in endeavoring to avoid improper indulgence, it should be equally the parent's care to steer clear of undue severity. For, if the one strengthens self-will, the other imbitters present existence, strikes at the root of the most valuable social virtues, equally spoils the temper, enfeebles the mind, and has a tendency to repress the elasticity of spirits required in the ordinary transactions of riper years.

The respect due to the superior wisdom of the parent is a salutary feeling, serving a valuable purpose in the relative position of parent and child, and is as widely different from an abject restraint produced by fear of punishment, as from an impertinent self-confidence produced by uncontrolled indulgence. When the fear of punishment predominates, the child almost necessarily becomes artful — not so solicitous to avoid faults as to escape detection by artifices, which still more incurably deprave the heart. Indeed, timid children, if treated with severity, can scarcely resist the temptation to hide offences, if possible. Though severity may extort confession, and promise of amendment, it is not in itself able to awaken virtuous thoughts or implant correct principles. A spirit of revenge is too often generated by such a course. Correction, to prove salutary and beneficial, must, as a general rule, be applied to the mind, not to the body. Proper motives must exist and be appealed to. Children must be taught that parents are rather afflicted than exasperated by their misconduct, and thus their better feelings and their reason are excited and brought into play — a far more likely mode of reclaiming them from evil, and effecting a permanent reformation, than the frequent recurrence to the rod, or harsh rebuke, which irritates the disposition, but rarely convinces the judgment.

We wish to express our strong conviction that, whipping children for failing to make due progress, is a very grave error, which has made many dunces and ruffians, but never one apt scholar, or great man. We do hope the directors of our common school education will take early and thorough ground against the infliction of physical pain in our schools, for any thing else than contumacious resistance of authority. Who can suppose that a boy, whipped for not learning his lesson, will be likely to learn it better thereafter, or that he will be likely to ascertain the true reason why he should learn at all! This is an important matter.

HAY FEVER, OR AUTUMNAL CATARRH

AT the meeting of the Massachusetts Medical Society for 1866 Dr. Wyman, of Cambridge, gave an account of a singular catarrhal affection, or cold, hitherto undescribed, and named by him *Autumnal Catarrh*. Several years later—in 1872—Dr. Wyman published a volume under the title *Autumnal Catarrh*, of some 170 pages octavo, in which he presents a great variety of cases of this disease, and his views as to its treatment, to which we refer our readers who desire to look into the subject fully. There have been sundry other small treatises published, but his is the largest and the best we have seen.

The number of those who suffer from this annoying ailment is increasing year by year, and we therefore present a brief synopsis of the general history of its SYMPTOMS, as given by Dr. Wyman. The cases agree, in the time of annual return, about the second or third week of August. It is first perceived as a slight itching of the palate and of the back portion of the roof of the mouth, and extending soon after from the throat into the ears, leading the sufferer to attempt relief by rubbing and pressing the external orifice of the ear. In a day or two there is irritation and a stuffing and obstruction of the nostrils, inducing sneezing. The paroxysms are of short duration, and often quickly relieved. At first these attacks come on in the morning, sometimes later. The discharge is limpid and almost without mucus, but often very copious, following closely the fits of sneezing. The eyes water and the eyelids itch, mostly at the inner corner. These occur in paroxysms, also of brief duration, but one can scarcely resist rubbing the eye-balls violently; all of which results in inflamed and swollen eyes and lids, and often of the face also. The taste and smell are impaired, and, in cases, nearly gone. Deglutition is interfered with; the membrane or lining of the mouth, tonsils, and pharynx becomes irritated, and the lips dry, cracked, and swollen. Often the skin of the scalp, back, and chest, itches, and there is likely to be chilliness, a poor appetite, and lassitude and weakness, and an accelerated pulse. Toward the close of the second week a frequent and dry cough will evince irritation of the bronchial mucous membrane, which will perhaps be relieved by the slight expectoration of transparent glairy mucus. Dampness and a rain-storm may afford relief.

The third week the affection of the lungs will gradually increase and get to its height, and, towards the end, the fauces, eyes, and nose will improve, and by the last week in September, or the first frost, are nearly gone. Such is the usual course of the disease, but the symptoms are seldom all present in the same individual.

Dr. Wyman knows of no treatment that will prevent the disease, or at least nothing that can be relied on. Medicines are more or less useful to different individuals. Dietetic measures are of more value. No one method can be suited to all cases. Careful observation and experience, each person of their own case, should teach. Avoid extreme heat and the direct rays of the sun; the smoke and dust of railway or street, often the movement of the air, will annoy. Warm clothing should be worn; flannel next the skin, and of greater thickness as the weather grows cooler. Do this at night also, and avoid drafts. Rubbing with a flesh-brush increases the circulation. Washing the surface of the body with warm water in which pearl-ash or soda has been dissolved, and then anointing with olive oil, has been found useful. It protects the skin from changes of temperature.

Remedies.—Quinine has been more successfully used than other medicines, such as Iron, Arsenic, Nux Vomica, Bromide of Potassium, etc. Quinine

is known to be a specific in intermittent fever, and so, by analogy, is likely to do good in this regularly returning affection. It is a good tonic, and increases the desire for food and the ability to digest and appropriate it. Commence its use a fortnight prior to attacks of the disease, and continue in doses of two grains with each meal. Use gentle laxatives, like Congress Water, Rochelle Powders, or Rhubarb Pill, to keep the bowels open daily and freely. Chewing Cubeb Peppers will relieve itching in the throat, and also gargling with Cold Water, in which a teaspoonful of Chlorate of Potash to a pint of Water has been dissolved. The Spasmodic Cough may be relieved by the use of the Tincture of Indian Hemp or the Fluid Extract of Hyoscyamus.

The only absolutely safe refuges from these attacks of Catarrh can be found by going into the higher, non-catarrhal regions upon the Alleghenies or Rockies, at the Franconia Notch, White Mountain Notch, in the Green Mountains of Vermont, in the Adirondacks of New York, in Northern Michigan and Northern Wisconsin, Montana, Colorado, etc.

MENTAL INFLUENCE.

A HEALTHFUL state of the mind and feelings is as important as of the body, for the feelings constitute, through life, an ever-acting source of bodily health or disease; and upon their proper regulation, most of the happiness and value of life depend. The more closely we watch the play of the passions in their effects, the more we shall be convinced of their powerful influence for good and for evil. To demonstrate this fact, I refer you to the reports of our own and foreign asylums for proof that fright is the cause of many mental hallucinations.

It is fully established by practical fact, that each and all the passions and emotions of the mind, when once *too strongly* excited, are but the more easily excited again, and again, and for a longer time, by the repetition of the same cause. By repeated and continued excitement, any one of them may be made to become the predominant habit of the mind. This important truth, a knowledge of which is so essential, especially to mothers, or those having the care of young children, seems to be little known, and little cared for, in the raising of their children.

In many instances it is a common impression, that when a child has been frightened, or otherwise alarmed by any noise, or by the sight of any object, repetition or exposure to the same influence will have a tendency to remove the pain from its mind; and for this reason children are often and designedly compelled to endure repeated frights. But this is not the case; nothing is more erroneous, either in theory or practice. When a child has been once greatly frightened at the sight of any object or the hearing of any sound, you may make every effort to remove its susceptibility to fright from the same cause, but

you will find it will be worse and worse alarmed at each successive exposure under similar circumstances.

This will be the case, in most instances at least, even if the child has arrived at that age when his reason may be fully convinced of the perfectly harmless character of the object at which he has been frightened. His *reason* may be convinced of the utter folly of being frightened, but, nevertheless, at the next occurrence of the cause, his fright will return. The feeling is excited before reason and judgment are brought into operation.

The true and proper mode of overcoming the evil is to cause the child to be kept entirely free from the unhappy excitement. This may often be done by causing it to see or hear the object of the alarm at a distance, and while it is held calmly and persuasively in the arms of the parent or nurse, so that the emotion of fear shall not in the least be excited. But, however, if it is possible to remove it entirely from the noise or alarming object, it will be much better to do so, until time and age shall have effaced from its memory all recollection of the influence of the unhappy event. How frequently do mothers and nurses frighten young children, by leaving them alone in the dark! The way to remove this fear, is to take particular care that the child should be gradually accustomed to being thus exposed, by the mother remaining with it from time to time until it gradually loses its fears. Children who, when older, are afraid to go into a dark room or other dark places at night, should never be required to do so; always refrain from asking it of them, and set before them a proper example. In a short time their minds will be relieved of any fear or timidity. Children should never be shut up in dark cellars, closets or rooms as punishment for their faults, as the results of such a proceeding have, in many instances, been fatal. When such sad results occur, they are caused by fright or grief, or by the combined influence of both these emotions. The conclusion that a less evil will assuredly follow a less excitement of these and similar feelings, although the evil itself may not be immediately apparent, *is inevitable.* These alarms or excitements of the feelings will, more or less, have their effect upon the disposition of the child in after life, depending, more or less, upon its mental and physical character. This is true of other impressions.

Whenever, by the above injudicious practice, or by any other means, the sensations of fear, grief, or any other of the depressing passions have been deeply engraven upon the mind during infancy, they are seldom entirely eradicated in after life; but they often paralyze, to a greater or less extent, the powers of reason, and produce a deplorable state of mental imbecility, which not only detracts

from the comfort and efficiency of the individual, but, in a peculiar manner, exposes the whole system to the inroads of many serious complaints.

Mothers, particularly, have it in their power in early life to form the disposition and character of their children, by instructing them properly, and by giving a right direction to the thoughts and feelings; by so doing, you determine which class of passions shall have the predominance in their minds during life. For there is no knowledge worth any thing, unless it is *founded upon truth.*

The state of mind, and the feelings which you cherish and indulge in before your confinement, even, will have a powerful influence upon the mind and disposition of your child. If the milk of the mother is capable of more or less affecting the child, how much more so must the influence of a mother's example operate upon the mind, from the first days of life! Let me, then, urge upon you the importance of a constant endeavor to be yourself an example of every excellence of character and habit, which you wish to cherish in your child. If a proper example is constantly set before your children, and advantage taken of every proper occasion to impress upon their tender minds the best of sentiments and passions, the happiest results may reasonably be expected. Then, on the infant mind impress sincerity, truth, honesty, fidelity, benevolence, generosity and their kindred virtues, and the welfare of your child will be insured, not only during this life, but the life to come. Then in their presence use every effort in your power to maintain as habitually as possible a *calm*, cheerful, and happy state of mind.

Children, at a very early age, are close observers, and will read with a great degree of correctness upon the countenance of their parents any expression of passion or emotion. Circumstances which are often considered of the least importance, may, in the mind of a child two or three years old, sow the seeds of cruelty, and establish in its disposition excitements, which can never be eradicated or entirely overcome. For instance: a spirit of resentment, and a habit of retaliation, as often inculcated and encouraged in children, by placing a stick in the hands of the infant and teaching it to strike and whip the "naughty" chair, stool, table, or other object against which it may have been so unfortunate as to have hurt itself. In this way a strong desire for revenge has often been deeply and permanently implanted in the breast of children, which state of feeling has so increased, that in after years the most fatal consequences have resulted from it, and the heart of many a parent broken.

The excitability of the nervous system is always greater in early infancy, than in after life. We should remember that an angry look,

a loud tone of voice, or a harsh countenance, or a rude shake or blow, may give such a shock to the system as to greatly increase the sensitiveness of the child, and, if often repeated, may impress upon its character such a degree of timidity, as to be to it a constant source of unhappiness and inefficiency during its whole life; or it may produce actual disease of the brain, which, if not soon fatal, may, in after years, result in imbecility and insanity.

In other instances, there can be no doubt, but that by injudicious treatment — that is, too harsh, severe, and unfeeling — very much is often done, during the first years of life, to sour the disposition, to diminish self-respect and kind feeling, and to develop those passions which, in after years, lead to the commission of the worst of crimes.

Never frighten your children. We have no doubt that, by this injudicious treatment, many serious mental as well as physical injuries have been the consequence. In the Glasgow *Constitutional* is an account of the indiscreet conduct of a school-mistress, who, for some trifling offense, most foolishly put a child in a dark cellar for an hour. The child was terrified, and cried bitterly. Upon returning to her parents in the evening, she burst into tears, and begged that she might not be "put into the cellar." The parents thought this extremely odd, and assured her there was no danger of their being guilty of so great an act of cruelty; but it was difficult to pacify her, and when she was put to bed, she passed a restless night. On the following day she had a fever, during which she frequently exclaimed, "Do not put me in the cellar!" The fourth day she was taken to Sir Astley Cooper in a high state of fever, with delirium, frequently muttering, "Pray, do not put me in the cellar." When Sir Astley inquired the reason, the parents informed him of the punishment to which she had been subjected. He ordered what was likely to relieve her; but she died in a week after. Another case may be cited from the same authority. It is that of a child ten years of age, who wanted to write her exercises, and to scrape her slate pencil. She went into the school in the dark to fetch her knife, when one of her school-mates burst from behind the door to frighten her; she was much terrified, so that her head ached. On the following day she became deaf, and so much so as not to hear the loudest talking. Sir Astley Cooper saw her three months after this had happened, and she continued in the same deplorable state of deafness.

A boy, fifteen years of age, was admitted an inmate of the Dundee Lunatic Asylum, having become imbecile by fright. When twelve years of age, he was apprenticed to a light business, and some trifling article being one day missed, he, along with others, was locked up in a dark cellar. The children were all much alarmed, and thus he became insane.

THE FAULTS OF CHILDREN.

IT may be well to drop a hint against the folly and impropriety of making the habits of your children the subject of conversation with other people. Nothing can be more unkind or injudicious. If you wish your children to reform, you must throw a shield around their character. However foolish they may have acted, let them see that you are anxious to keep open the way for their return to propriety and respectability. Many a youth has been driven to reckless despair, by being upbraided before strangers for misconduct, which never ought to have been known beyond his own family. On the other hand, many a wanderer has been encouraged to return, by observing in those most injured by his follies, a readiness to reinstate him in their favor, and to shield his reputation from the reproach of others. It is not wise for a mother either to boast of the excellencies, or to publish the faults of her children, but rather to ponder them in her heart, to mention them only at the throne of Grace, there to return thanks for what is right, to ask for guidance to correct what is wrong, and, in all things, to make plain before her face the way of her own present duty in reference to them.

DISEASES OF CHILDREN—SHORT TREATISES.

TREATMENT.

AS the greater number of the Diseases of Children are mostly confined to the stomach and bowels, and as they usually arise either from the decomposition of the food, or the irritability of their nervous system, acted upon either mechanically, as in Teething, or by chemical causes, the great object is to render this part of their frame less susceptible of irritation, by counteracting the immediate circumstances which give rise to and aggravate this morbid state; these circumstances being limited, in a great measure, to the milk, food, and drink of infancy, and avoiding exposure. It then lies within the power of a mother, or nurse, by strict attention, to form a means of prevention without the use of much medicine, or at least by the most simple remedies, for in the management of the diseases of

infancy, the more simple the remedies the better; and by attending to leading causes, as respects their food and drink, habits of nursing, sleep, and exercise, it would tend to lessen the excess of mortality of the human species, which takes place at this early age. Such innumerable deaths arising from the deviation from the paths of Nature, should at least direct our attention to a proper management, if we desire to give health, vigor and comeliness to our offspring.

FIRST PERIOD; OR, RETENTION OF THE MECONIUM.

DURING the time of Gestation, there gradually accumulates in the bowels a dark green substance, nearly black, medically called the *Meconium*. Nature has indued the first milk of the mother, which is always of a laxative quality, with power to remove it, and for this reason the infant should be applied to the breast as early as possible, or as soon as it shows an inclination to suck. The consequences attendant on its being retained in the child's bowels for any length of time, is frequently Colic or Spasms; therefore, if the mother's milk is not sufficient to carry it off, which it seldom fails to do, it should be removed by some gentle and very simple means, such as a little Molasses, or a small tea-spoonful of Sweet Oil, or of Castor Oil, or a little Manna, or a little Magnesia will have the effect; and this may be known by the evacuation assuming the natural appearance. It seldom, however, requires such remedies, unless the secretion of the milk in the mother's breasts is rather slow.

Though the dislodgment of the matter be very essential, it must be effected by gentle and simple means. The importance of caution at this period can not be too much insisted on. We must remember by what a frail thread the commencement of life is tied, and how the least cause or neglect may terminate an existence just begun — a result much too frequently seen. This is not the intention of Providence, but rather one arising from our own mismanagement of the different means requisite to the attainment and establishment of health. This is more clearly perceived when children are born healthy, and show no marks of disease until they come into their attendants' hands. Early neglect in not attending to the infant's stools, to see if this accumulation of matter has been discharged, will often produce Colic, Bowel Complaints, etc.

THRUSH.

THIS is sometimes called Canker, or Baby's Sore Mouth; it is medically called *Aphtha Infantum*, and is very common in early infancy, affecting the mouth and fauces, or the back part of the mouth, the lining membrane of which, in this disease, appears as if sprinkled over with bits of milk curdle, produced by an excess of acid, which causes also irritation of the mucous lining of the bowels. It generally makes its appearance in the course of the second or third week. The small sores make their first appearance on the under lip, like little blisters, which soon spread so as to cover the inside of the mouth with a kind of whitish crust. When the disease is severe, this crust is of a brownish color, the child is fretful and slobbers a good deal, and suckling is painful. It likewise has a slight fever; is drowsy; and the stomach and bowels are out of order, and the discharges a greenish color. This disease is not generally serious, and usually passes off in eight or ten days. Simple remedies are required to assist Nature to throw off this acid state of the stomach and bowels. Thrush is frequently produced by feeding the infant with bread and other things unfit for its stomach.

Treatment. — The first thing to be done, when an infant is afflicted with Thrush, is to correct the acid state of the bowels, by a few grains of Calcined Magnesia — it is preferable to give it in the fluid form, or mixed with water, or if the bowels are loose, by Prepared Chalk, following either of these antacids by a mild dose of Castor Oil, repeated every second day. After a moderate operation of the infant's bowels, and the offensive, irritating matter is removed, should the bowels be loose and griped, you will find the Chalk Mixture one of the best remedies. The Supercarbonate of Soda in a weak infusion of Anise-seed or Catnip, with or without the addition of a drop or two of Paregoric, as the case may require, is a valuable remedy in correcting the discharges and quieting the child. When this complaint makes its first appearance, outward applications will greatly assist Nature, and relieve the suffering, when combined with simple remedies, such as Mucilages of Gum Arabic, Flax-seed, or Slippery Elm; these articles, by being frequently applied with care and tenderness, will have a soothing effect, and make the little infant more comfortable, while Nature is curing the disease. When the disease is severe, it may be necessary to give a gentle Emetic of Ipecacuanha, but purgatives are ordinarily sufficient, occasionally repeated. Let the mouth be tenderly washed with the following gargle: Take Sage, Hyssop, Sumach Berries, equal parts, and make a strong decoction, sweeten with Honey, and to half a pint add half a tea-spoonful pulverized Borax: let the mouth be often washed with this preparation. A tea made of Red Raspberry leaves is good also. The regulation

of the bowels by some mild aperient, or Castor Oil, and the wash I have mentioned, are the best remedies. When the case is mild, the child will be well in seven or eight days, and the mouth heal if it be tenderly washed daily by the nurse. Children past infancy, and even adults, or grown persons, are sometimes affected with Aphtha.

GALLING OR CHAFING.

THIS is an inflammation which occurs generally in fat children, and is often produced by want of proper cleanliness, or by coarse napkins or clouts; it breaks out in the groin, between the legs, etc., and is often very painful and troublesome.

Treatment.—Wash the parts with Cold Water, and anoint or grease them well with fresh Spermaceti Ointment, or a little fresh Butter, in which there is no Salt. When it is difficult to cure, make a wash of two grains of White Vitriol to three table-spoonfuls of Water; or you will find Lime Water, made weak, a good remedy. After washing the parts tenderly, apply a little Dry Powder, or fine Flour, or Chalk, which heals the sores very quick, if you are careful in keeping the parts from being moistened or wet by the urine.

RED GUM.

THIS disease is an eruption of small pimples on the face, and sometimes on the body and limbs, in clusters or large patches, and is most generally produced by the improper practice of washing the infant in Brandy or Whisky, and using violent friction with Soap, in cleansing the skin of that slimy covering which nurses ought to be in no haste to remove, when the water and oil used in the first gentle washing fail perfectly to cleanse it.

Treatment.—During the time these eruptions are on the body, exposure to cold should be avoided, and the bowels kept open by some mild medicine, as Manna, Magnesia, or Syrup of Rhubarb. If these eruptions suddenly disappear, and the child be made sick from its being driven in by cold or exposure, put into a Warm Bath, and afterward give a gentle Emetic of Syrup of Ipecacuanha, or some Warm Tea, as Catnip or Balm, so as to produce a determination to the skin, and throw the eruption out again. Or, give half a tea-spoonful of the Calcined Magnesia, in a little Milk, or a tea-spoonful

of Castor Oil, which is generally all the medicine that is required. If the skin is hot and dry, bathe with Warm Water, and give Catnip Tea, to make it perspire. The eruption generally disappears in a few days.

YELLOW GUM.

THIS is medically called *Icterus Infantum.* The Yellow Gum is a yellowness of the skin, attended with sleepiness, languor, and sometimes a disinclination to nurse. It seldom occurs after the child is a month old. Like the Red Gum, it only continues for a few days, and then goes off; it generally arises from the retention of the Meconium, which I have before explained, and is generally purged, or carried off, by the milk of the mother. It requires but little medicine.

Treatment.— Give some simple remedy to open the child's bowels, if the mother's milk is not sufficient for this purpose, such as a little Rhubarb, Magnesia, or Castor Oil, or Manna; or a few tea-spoonfuls of mild Thoroughwort Tea, administered every day, for three or four days in succession, will remove the disease. Medicines which purge or drain the bowels, are only those which appear to be of much service. Or if there is Diarrhea or looseness of the bowels, which is sometimes the case, a little Paregoric or Godfrey's Cordial may be used.

VOMITING.

THIS generally arises from overloading the child's stomach, either by suckling too much, or feeding it too much. When it vomits up the food or milk, in a curdled state, it will require moderation, either in feeding or suckling, or if the food should disagree with it, substitute some milder article. The child's bowels, if necessary, may be opened by some mild medicine.

Treatment. — Magnesia and Rhubarb combined may be given, a few grains occasionally; and if this dose does not afford relief, then cleanse the stomach with a little of the powder of Ipecacuanha, or Hive Syrup; or apply over the stomach warm applications, such as Camphorated Spirit, and bathe the feet and legs of the child in Warm Water.

MILK SCAB.

THESE scabs or sores often appear upon the forehead and upper part of the face, in children otherwise remarkably healthy, which, however, seldom remain long, and pass off without leaving any scar or disfiguration, however long they continue. It is frequently produced from the milk of the mother being too rich, or sometimes it is from some irregularity of diet while nursing. Very little treatment is necessary.

Treatment. — Washing or cleansing the parts with Castile Soap and Tepid Water, and giving a few grains of Sulphur or other aperient, occasionally. It generally disappears entirely on the child's cutting a few teeth, or upon its being weaned. When it continues after this period, the food should be light, with a little salt in it, and the milk ever largely diluted with water; and gentle laxatives, such as Manna or Castor Oil, should be given occasionally until it passes off.

SCALD HEAD.

THIS complaint is very troublesome, and generally occurs in scrofulous children, or those whose health is feeble and frail. In its early stage, it is purely local, having its seat in the glands of the skin, at the roots of the hair upon the scalp, and should be attended to early, or it will spread extensively over the whole head of the child, and may ultimately injure its constitution and general health.

Treatment. — Apply a little Sulphur or Brimstone, in the form of ointment, at the same time keeping the bowels open by some laxative medicine, such as Magnesia or Castor Oil, and then apply the ointment to but a small portion of the eruption at a time, so as to heal it gradually. If the Sulphur Ointment does not heal it, then use a very diluted ointment of White Precipitate, and cautiously apply this every night. Cases of this kind, however, when they do not yield to the above treatment, require to be placed under medical treatment for impurities of the blood, which arise from hereditary disease.

CHOLERA INFANTUM.

THIS disease is known by severe vomiting and purging, which, in a few days, and often in a few hours, by neglect, may prove fatal. It is most usual in the months of July and August. An accumula-

tion of heat about the bowels and stomach, and in the hands and feet, is mostly the first symptoms of this complaint, soon followed by vomiting, or purging, or both together, with a pain in the pit of the stomach, griping of the bowels, shortness of breathing, a sudden loss of heat, great prostration of the strength, a quick, small, and feeble pulse, great thirst, followed by a cold perspiration. In dangerous cases, the natural heat never returns; but the child becomes weaker and colder after every discharge from its bowels until death takes place. The discharges from the stomach and bowels consist of bile; and the other fluid from the digestive organs is either of a yellow or green color. The child is constantly retching or trying to vomit, with a severe pain at the pit of the stomach. These symptoms require at once strict attention.

Treatment.—Warm flannels should be applied to the surface of the body, and a Mustard Poultice, or spirits of any kind made hot and applied over the stomach, or hot applications made frequently; also give a few tea-spoonfuls of Peppermint, Ginger, Cinnamon, or Tansy Tea. If these teas, with the warm applications, do not allay the vomiting, a dose of Laudanum or Paregoric should follow very soon. The dose of Laudanum for a child one month old, may be 1 drop; for a child three months old, 2 drops; for one six months old, 3 drops; for one a year old, 5 drops; for one two or three years old, from 5 to 8 drops. This dose may, if it becomes necessary, be repeated in two or three hours, until the stomach and bowels are tranquilized.

Frequently the stomach is so irritable, it refuses to retain any medicine; in such cases give an injection of a table-spoonful of Flaxseed Tea, or some other mucilage, such as Slippery Elm, into which drop twice as much Laudanum as named before for each dose. If the discharges are principally downward, that is from the bowels, it will be best to give the Laudanum by the mouth; but if they are chiefly upward, it will be better to give it by injection.

As soon as the stomach is quieted, a dose of Calcined Magnesia, or a dose of Castor Oil, in a little Peppermint Tea, should be given. If this disease continues for some time, a blister may be drawn upon the stomach. If there is great coldness of the skin and loss of strength, give a little weak Wine or Spirit of any kind to restore the strength. As this disease is apt to return, after a few days, it will be well, should there be any such appearance, to give, for two or three days, occasionally, a little Paregoric. I have frequently known in the hot stage of this complaint, before the vomiting commences, an Emetic of Ipecacuanha, or cleansing the stomach and bowels by some mild purgative, to prevent the disease entirely. Should this disease settle into a Chronic Bowel Complaint, the remedies proper to be used will be found under the head of "Summer Complaint." In my practice, I have used the Warm Bath with great benefit, and on removing the child, wrapped it in a blanket, so as to produce a

free perspiration or sweat. The only drink should be Water cooled with Ice, and all food be withheld, as much as possible, for a few days. This course, being followed for two or three days, will generally produce a mitigation of all the symptoms. Much may be done, in the way of prevention of this disease, by regulating the diet and clothing of children during the summer months.

ANOTHER MODE OF TREATMENT.

This disease affects children during the summer months, and is often called Summer Complaint, or Cholera Infantum. There is generally not so much sickness at the stomach, but the discharges from the bowels are frequent, and usually of a watery, greenish, or white frothy character. Sometimes, if neglected, it will run into Dysentery or Bloody Flux.

The treatment should be about the same as directed for Cholera Morbus, varying it according to age and circumstances. Rely principally on the Neutralizing Physic, made into an infusion or syrup, and given freely. After giving this for a couple of days, give also a strong tea, or decoction of Blackberry Root, Strawberry Leaves and Root, Cherry-tree Bark, Cinnamon and Cloves, sweetened with White Sugar. The Geranium Root (called Alum Root, Crowfoot, etc.), is also an excellent remedy in this complaint. An ounce of it, bruised or powdered, may be boiled in one pint of Sweet Milk, and given three or four times a day, half a tea-cupful at a time. The Burnt Rhubarb may also be given in small doses, with a little Syrup or Molasses. But no matter what else is given, give occasionally of the Neutralizing Physic. Attend well to the skin ; bathe the child twice a day in Warm Saleratus Water, or Weak Lye, and rub the surface well, so as to promote, if possible, a healthy action in the vessels of the skin. Let the diet be light — as Rice, Boiled Milk, with a little Flour stirred in it, and the like.

If the disease assumes the form of Dysentery or Flux, which will be known by there being more or less blood mixed with the dischages, and they will be small in quantity and more frequent, give the following : Take Podophyllin, 2 grains ; Leptandrin, 4 grains ; Ipecac, 4 grains ; White Sugar, 20 grains ; triturate the whole well in a small mortar, till thoroughly mixed : divide into eight equal powders, and to a child from two to four years old give one every three hours till four powders are taken ; from four to six years old, six of the powders, in the same way ; over six years, all of them ; and under two years, two of the powders, divided into four doses. They may be given in a little water, in a spoon. After these have been taken, which will operate freely on the bowels, give the Neutralizing Physic, and, if necessary, injections of Cold Water, and apply cloths, dipped in Cold Water, to the lower bowels and abdomen. A dose of Castor Oil, with a few drops of Spirits of Turpentine, may also be given.

SUMMER COMPLAINT.

CHILDREN, from one to three or four years of age, are very liable during the summer months, to looseness in the bowels or protracted Diarrhea, known very generally as the Summer Complaint. The discharges from the bowels are often thin and watery; sometimes of undigested food; at other times greenish, or white and frothy like soapsuds. The complaint, if neglected, is liable to prove fatal, and hundreds of children are carried off by it every summer.

Treatment. — In the management of this disease, two things are very important: Attend well to the skin, and be careful about the diet. The patient should be bathed twice a day — that is, washed well all over with warm Alkaline or Saleratus Water; rub dry, so as to keep the skin clean and the pores open, and, if possible, in a healthy condition.

The food should be of easy digestion, mild and unexciting, yet nutritious — such as boiled Rice, thickened Milk (or Flour boiled in good Sweet Milk); good, well-baked Bread; no meat, except a little Mutton well cooked (but not fried in grease), and perhaps dried and salty Chipped Beef; no green Vegetables, Fruits, or Berries, except ripe Blackberries, which are generally good in all Bowel Complaints.

Simple medicines should generally be relied on. It will always be well to commence the treatment with some good Cathartic medicine, such as the Neutralizing Powder, or Cordial and Leptandrin; after giving this for a day or two, until it has acted on the bowels, and changed the passages to something more of a natural color, it will be proper to give astringents, such as any of the following: Take about 1 ounce (if green, 2 ounces) of White Oak Bark; Blackberry Root, 1 ounce; Wild Cherry-tree Bark, 1 ounce; Cinnamon Bark, 1 ounce; Cloves, ½ ounce; Allspice, ½ ounce; bruise all, and boil slowly for an hour or two, in about three pints of water, down to one pint or less; strain, and add about ¼ pound of White or Loaf Sugar (Rock Candy is the best); bring to a boil to melt the Sugar, and when cool, add half as much good French Brandy as there is of the other, and it is ready for use. Dose: from one to two tea-spoonfuls to two table-spoonfuls, according to age, three to six times a day. This preparation, if properly made, can be relied on.

The Neutralizing Cordial can also be given occasionally, especially if the other should seem to be too astringent or binding, as it will not be well to check up the bowels very suddenly, nor too much.

The Blackberry Cordial will also be found good, especially in the milder forms of the disease.

A decoction of the Sweet Gum Bark (where that article can be had) is also an admirable remedy in this, as well as most forms of Bowel Complaints. Take a handful of the inner bark (fresh from the tree is as good as the dry), boil in a quart of water down to a pint; it may be sweetened with White Sugar, and a little Brandy added;

take in doses of one or two table-spoonfuls to half a tea-cupful, according to age of patient and strength of the medicine.

The following preparations are both food and medicine in this complaint:

Parched Oats. — Half a pint of clean Oats, browned the same as Coffee, but not to be ground; then boil in a quart of water to one pint, and when cool, pour off; take in doses of half a tea-cupful, more or less. It may be sweetened, and, if preferred, a little boiled Milk may be added. The whole pint should be taken in the course of the day.

Flour and Water. — Take a tumbler of Cold Water and stir into it Wheat Flour until it becomes about the consistency of thick cream, and then drink. A grown person could take a tumblerful at once, and repeat two or three times in the day, but for a child, a tumblerful, or even less for some, would be enough, to be taken at different times during the day. It is drink, food, and medicine — said to be infallible — and may be taken freely every time the patient is thirsty. It is an admirable remedy in Dysentery.

Parched Corn. — Parch some Corn, then grind fine in a coffee-mill, boil in Sweet Milk, and feed to the patient; or you may take Corn-meal, brown it in an iron vessel, and boil in Milk. It is good, healthy food, and an excellent remedy in all cases of Diarrhea, Dysentery, and Bowel Complaints, whether of children or adults. You may, in these complaints, let children eat as much Parched Corn as they please.

COLIC.

THIS is a very common complaint among children. It is generally produced by too much food, or some improper diet of the mother, and sometimes from exposure to cold or change of clothing, and often from bad quality of the milk. It makes its attacks suddenly, by violent screaming, kicking, drawing up of the legs, and frequently a stoppage of the urine or water. This complaint attacks those children who are subject to it, so suddenly, and often with such violence, that we should always be careful to attend to it at once, or it may produce Convulsions. Nursing children are very subject to the Colic, which is often so severe as to produce a cold sweat.

Treatment.— Paregoric seldom fails to procure relief. Children can take from ten drops to a tea-spoonful. Half a tea-spoonful is a medium dose for a child a year old. In children, where the distress is great, an injection, made of a small quantity of Common Salt dissolved in Warm Water, will often procure the most instant relief. Half a tea-spoonful of Castor Oil and half a tea-spoonful of Paregoric, mixed, will effect a cure. In some cases, a little Peppermint, or

Pennyroyal, or Ginger Tea, given warm, will remove the Colic. Dry, hot flannel cloths should be put to the stomach, and a bottle of hot water or a hot brick to the feet, or warm bathing and rubbing, or friction, over the stomach and belly, with some liniment, will give great relief. When the child is costive, or bound in its bowels, a gentle purgative of Manna or Castor Oil will be required to relieve the flatulence and constipation, or costiveness.

STOPPAGE OF THE NOSE.

SOME children are liable to a slight catarrhal affection or cold which nearly or quite prevents their breathing through the nose. It is commonly called Snuffles. The consequence is, that the moment they begin to suck they strangle, and soon throw their heads back, and appear to be unable to get their breath. This is a common complaint, but requires only the most simple remedies to relieve it in a few minutes.

Treatment.—Cleanse the parts or nostrils with Tepid or Warm Water, and then use the Camphorated Olive Oil, rubbing it over the whole surface of the nose, at the same time be careful it does not go into the eyes of the infant; which rubbing may be repeated whenever necessary. It is more frequently required in the night than during the day-time. Or you may grease the nostrils with Lard, or Sweet Oil, or Mutton Suet, and keep the head warm, and the bowels gently open with a little Castor Oil and Molasses, mixed, say a teaspoonful or two; or some warm tea, as Catnip, Sage, Balm, or Pennyroyal, may be given. Bathe the feet and legs of the child in Warm Water. I have, however, generally found the rubbing of the Camphorated Oil, as before mentioned, prove sufficient.

TEETHING.

THE process of Teething, to some children, is productive of no evil consequences, but to others it brings great distress, and sometimes many troublesome diseases. The time of Teething continues, in general, from the fifth or sixth month to the sixteenth month. Some children will begin to cut teeth at the age of three months, and others not until they are eight or twelve months old. If the first teeth are cut easily, it is a pretty sure sign that there will not be much trouble with the others. But if the child begins to cut teeth

in hot weather, about the time Bowel Complaints commence, it will often have a long and painful time. If the child commences cutting its teeth in the winter or fall months, and closes before summer, it most generally goes through with very little difficulty.

When Teething commences, there is a heat in the mouth, perceptible while the child is sucking; it begins to drivel from its mouth the saliva, or spittle; the skin becomes hot; the gums look red and swelled, and are very tender to the touch. The child is constantly conveying every thing to the mouth, and bites and grinds the gums together; but it will become perfectly quiet when gently rubbed by its mother or nurse. Nature has wisely ordered this flow of saliva for diminishing the inflammation and irritability of the gums, and for allaying thirst; it assists digestion, and lowers the action of the system, which is always excited by the process of Teething.

It is the usual custom to give an infant some hard substance to bite upon during Teething; this, however, is wrong; these hard substances tend to bruise and inflame the gum. The best material for this purpose is a piece of India-rubber, about an inch thick. The elasticity of it prevents injury to the gums.

In Teething there is always more or less disorder of the stomach and bowels. Most children are loose, although some will be costive or bound. A slight degree of looseness is not, perhaps, productive of much evil, but in hot weather it is apt to run into great looseness of the bowels; if too great it should be checked gradually. If the child is griped, or the stools discharged are of a greenish color, or of undigested food, or a watery matter, it should be considered as indicative of a disease requiring medical treatment.

Teething, in some infants, produces Fever, Flushing of the cheeks, Diarrhea, difficulty or disorder in passing of the Urine, Restlessness or Disturbed Sleep, Sore Eyes, Eruptions of the Skin, and sometimes Convulsions or Fits. These symptoms are by no means frequent, and in hundreds of children do not occur at all, for many infants cut their teeth so easily, that their first appearance is scarcely discoverable from any symptomatic affection. Feeble, weakly, and excitable constitutions are most liable to the disorders mentioned.

The whole number of a child's first teeth are twenty, although sixteen are all that commonly appear the first two years. There are four cutting teeth in each jaw, or four upper and four under cutting teeth. They are called the cutting teeth, or incisors, because they have a sharp edge to cut the food. These teeth have but one fang. There are four canine teeth, two upper and two under; these have only one prong or root. The two upper ones are called eye-teeth. The child cuts two grinders, or double teeth. Some children cut four

double teeth. They are called double teeth because they have two sharp edges with a groove between them, and resemble two cutting teeth put together. These are called grinders, because they grind the food after it is cut by the fore-teeth, or torn to pieces by the eye-teeth. The double teeth of the under jaw have two prongs, and the double teeth of the upper jaw have three prongs, except those next the eye-teeth, which have but two. In children, two of the lower cutting teeth are commonly the first to make their appearance. Next to these two upper teeth, which correspond to the lower ones, make their way through the gums. The four double teeth appear next. The canine and the eye-teeth are the last in the set to make their appearance.

The food, particularly in Teething, claims care equally with air, clothing, exercise, and cleanliness. Its regulations in infancy have already been sufficiently noticed, and if properly attended to, the management of the infant, while Teething, will be simple, and seldom require the interference of the medical attendant.

Treatment. — In ordinary cases of Teething, where there is not much disease of the stomach or bowels, no other remedy will be required, but an occasional dose of Calcined Magnesia, to correct sourness of the stomach, or a little Paregoric, to make the child sleep, and to relieve the itching and pain of the gums. A few tea-spoonfuls of weak Lime-Water will correct the sourness of the stomach, or Prepared Chalk; and if there is much griping of the bowels, Peppermint, Spearmint, or Pennyroyal Tea, should be given every little while, in sufficient quantity to bring a moisture upon the skin; or you may give a little weak Ginger Tea, strained. Should the bowels be disordered, with slight fever, give a mixture of Castor Oil and Paregoric every day or two. A half or a table-spoonful of Castor Oil may be given to any child after the age of Teething commences, or after it is nine months old; this may appear a large dose, but it is not so. It will be found a fine remedy. To this quantity of Oil add two or three drops of Laudanum, or twenty-five or thirty drops of Paregoric, reducing the dose of Laudanum or Paregoric in proportion to the age of the child. When there is sourness of the stomach, or discharges from the bowels, a tea-spoonful of Calcined Magnesia should be used instead of the Castor Oil.

When the gums are much swelled and inflamed, it will be proper to cut the gums with a sharp penknife or gum-lancet. This simple operation will afford great relief, and is not a painful one by any means. The transition from the crying and suffering of the poor infant to smiles and tranquillity will at once give evidence of the utility of this operation.

The treatment of the infant when Teething is very simple. The bowels should be kept open with Castor Oil, if they are not sufficiently relaxed at the time. Fresh air, exercise, and cold sponging ot the body every day, and rubbing dry with flannel, are very useful.

The breast should be given often, but not so long at a time as to overload the child's stomach. The mother must attend to her diet and health, and avoid all stimulating food or drink which will injure her milk, and thus, in this critical period, aggravate the difficulty of Teething. These cases are much increased by the habit of parents giving the infant stimulating food whenever it cries from the irritation attending this process, and from this cause Dentition may result in serious disease. From these remarks it must be seen how much the sufferings from Teething may be mitigated by judicious management. If the mother is able to support her infant upon the breast alone, Teething will be found, in most children, comparatively an easy process, and unattended with danger. The process of Teething, although, under certain circumstances, a very constant incitement to disorder, yet, where the system of the infant is properly regulated, may be comparatively a harmless necessity. It is true that, during this period, the condition of the vessels about the head is more active than before, evincing excitement, either by transient flushes or by a more constant presence of heat and fullness; but even this circumstance does not materially aggravate the danger, if the child be kept cool, and the state of the stomach and bowels attended to. Their healthy condition, with care, diet, and good nursing, will enable Nature to ward off the evils attendant on this process.

WEANING.

THE Weaning of infants must depend upon two considerations — the condition and health of the mother or nurse, and the age of the child. If the mother be in such a condition of health that she can not nurse her infant, with benefit either to herself or it, Weaning, of course, must take place at once; but, in the generality of cases, the proper time is about the ninth or tenth month, when the first four teeth have appeared. Indeed the development of the teeth may be taken as a sign that other food is required; if, therefore, their appearance is delayed, Suckling may, in most instances, be prolonged, for the reason that the late appearance of the teeth is frequently associated with delicacy of constitution, and then it is best for the child to be kept longer at the breast. Children that are weaned at six months, particularly if of a delicate constitution, will most assuredly be attacked by disorder of the stomach and bowels. Unless the mother becomes pregnant, or some other such cause arise, if she consult the welfare of her child, she will not give up nursing at this early period. The age, then, at which Weaning ought to take place, must ever depend upon particular circumstances, as before

mentioned. As a general rule, however, both child and mother being in good health, Weaning ought never to take place earlier than the ninth month, and never later than the twelfth month.

Treatment. — In all cases, the teeth not appearing, shows at once an unfitness of the system for any other than the natural food from the breast of the mother. Weaning should never take place while the child is suffering under the irritation of Teething, as it will derange the bowels, and often bring on Convulsions or Fits. The proper plan to wean a child is to effect it gradually from the sixth month, by feeding it twice or oftener during the day and night, so that when the proper time for Weaning arrives, it will be easily accomplished, without suffering to the mother or child. It is very important at this period to regulate the quantity and quality of its food, so as not to overload the stomach. In fine weather, give much exercise in the open air; this tends to invigorate the system and strengthen the digestive organs, and so enables the child to bear without injury the change from the mother's milk to other food. Be particular and bear in mind, that the two causes most frequently productive of disorder in children, are *over-feeding* and the use of *unsuitable food.* If these were properly attended to, children would have but little use for medicine.

CROUP.

THE Croup, medically called *Cynanche Trachealis*, is an inflammation of the windpipe. This is a dangerous and distressing disease, to which children are very subject, and requires early attention. Croup is most prevalent in cold, moist weather. In some few cases its attack is sudden; but generally it is preceded for a day or two by the symptoms of a common Cold, accompanied with Hoarseness and Cough. In the approach of Croup, the cough is rough, and has a peculiar shrill sound, like the crowing of a cock, or the barking of a dog. I have generally observed that this disease occurs mostly at night. The child, without awaking from its sleep, gives a very unusual cough, and in a short time it is repeated again, and again, followed by a great difficulty of breathing. As the disease progresses, the fits of coughing become more and more distressing; the child makes a great effort to breathe; the face is flushed, and the head is usually thrown back to escape suffocation. Upon the early application of suitable remedies, every thing depends.

Treatment.— The best remedy which can be given to a child attacked with Croup, is an Emetic. A wine-glassful of Lard Oil

or Goose Oil will often answer this purpose where no better medicine can be obtained. An effective Emetic can be given to a child in the Croup, in a heaping tea-spoonful of powdered Alum, mixed with Molasses or Honey. This can be given every ten minutes, until it vomits freely. The Alum operates on the salivary glands, and makes them pour out the saliva or spittle in great quantities. In many cases this has acted like a charm, and relieved children supposed to be in the last stage of this disease. The Tincture of Lobelia, in tea-spoonful doses, as an Emetic, may be given every six or eight minutes, till free vomiting takes place. The Lobelia can hardly be given too freely to a child in Croup; in some cases, where the disease has been very alarming, as much as a table-spoonful has been given at a time with success. As soon as the Emetic begins to operate, it should be promoted with a strong tea of Sumach and Bayberry. My practice, on first discovering the disease, is to give a quick Tepid or Warm Bath, bathing well the head, throat, and chest; then give the Emetic last mentioned, and apply a wet bandage, well wrung out, about the throat, the seat of the disease, and warm applications to the feet, so as to produce perspiration as quickly as possible — the body being wrapped in a warm blanket immediately after bathing, so as to prevent the slightest exposure to taking cold. The warm applications to the throat should also be renewed from time to time, as may seem necessary; and the bowels kept freely open, perhaps, with Castor Oil and Molasses mixed. A late *Medical Journal* says: "Cold applications of Ice Water to the throat will speedily relieve this disease." I have, however, preferred warm applications.

A plaster of Snuff and Hog's Lard, laid upon the chest, is often the best means at hand for relaxing the system and subduing the inflammatory action. A tea-spoonful, mixed with a little Lard, and spread upon a rag, composes the plaster. It will sometimes make the child very sick at the stomach and vomit severely. When this is the case, or the vomiting continues long, it will be advisable to remove it until the sickness subsides.

The drink should be Flax-seed or Slippery Elm Tea, or some other mucilage. Equal parts of Squills and of Castor Oil, given in a dose of a tea-spoonful, every hour, until it operates upon the bowels, is one of the best remedies which has ever been administered. It quickens the secretion of the windpipe, at the same time producing a general relaxation of the system by evacuating the bowels. A tea made of the Seneca Root, or Blood Root, is a good solvent of the tough, slimy matter which clogs up the trachea, or windpipe. Great care, however, should be taken, not to administer medicine too fast. While the child is vomiting, nothing else should be given, unless it be a little drink.

It is always better to raise a sweat before you give any medicine to purge the bowels, as the two operations can not be well carried on at the same time. The purging of the bowels lessens the perspiration. Hive Syrup should always be kept in every family, where there are young children; it will be found in this disease a most valuable remedy. The dose is about a tea-spoonful, every ten minutes,

until vomiting is produced. In the first stage of this complaint, a portion of raw cotton, wet with Camphor, Whisky, or Vinegar, warm and applied to the throat, will be found useful.

When the disease is far advanced, and not yielding to the treatment, a poultice should be applied to the throat, of Red Pepper, Lobelia, Slippery Elm, pulverized, wet with Hot Water, and renewed when it becomes cool. After the removal of the poultice, some stimulating Liniment should be employed to anoint the throat, composed of Spirits of Hartshorn, ½ ounce; Spirits of Turpentine, ½ ounce; Laudanum, ¼ ounce; Sweet or Olive Oil, ½ ounce; mix together; or if this liniment can not be conveniently obtained, make warm applications of Hot Water, or simple Poultices of any kind, to the throat as warm as they can be borne, changing them as they get cool.

There are three remedies, which, if adopted at once, are almost certain to give speedy relief — an Emetic, a Warm Bath, and the application of the Yellow Snuff, as before mentioned. After the child remains in the bath from a quarter of an hour to twenty minutes, have a hot sheet ready, with which quickly dry the child's body, and then wrap up in a warm blanket and put to bed. The relief to the distressing symptoms, from this treatment alone, is sometimes very great indeed.

It may be necessary, in closing my remarks, to mention its prevention. Croup seldom occurs during the first year of infantile life — most frequently in the second year and upward. When it has once attacked a child, it is very liable to recur at any period before the thirteenth year of age. It is, then, very proper that the mother should be made acquainted with the means of prevention. They consist in being careful in protecting the child from cold or damp weather, particularly in the spring, or after heavy rains, or in cold, damp changes of the atmosphere; for Croup is then most prevalent. The Croup is often produced by the child sitting or playing in a room newly washed out, when there is a predisposition to the disease. Then the child, every morning upon rising from bed, should be sponged all over with Cold Water, in which is put some Salt, and rub well with a coarse towel. The clothing should be warm; the neck and arms always well covered; flannel worn next to the skin, throughout the year, and the bowels kept regular.

We have lately had our attention called to one of the most valuable remedies in the treatment of this so frequently fatal disease, the Croup; perhaps there is no one remedy of more real value, and, contrary to the opinion of some, it can be given to almost any extent with safety to the patient. It is the Blood Root. The best mode of administration is to steep, for a few minutes, from ¼ to ½ ounce of the finely powdered root in ½ a pint of equal parts of Vinegar and Water, and sweeten it. From a tea-spoonful to a table-spoonful, according to the age of the patient, should be given every fifteen or twenty minutes, until vomiting is produced. We often add a liberal proportion of Ipecacuanha to it, by which its activity is increased. If vomiting is not produced, the dose should be increased

CONVULSIONS, OR FITS.

THIS is a frequent disease of infancy, and particularly during the period of Dentition or Teething. These often occur suddenly and without any premonitory symptoms, but are commonly preceded by spasmodic twitchings of the hands and feet, during sleep. Overloading the stomach is one of the great causes, and most of the Convulsions of children are dependent upon the presence of some irritation, either in the stomach or bowels; or produced frequently by inflammation of the gums during Dentition; relief may be immediately obtained by the sudden escape of the tooth from its enveloping membrane, either by lancing the gum or otherwise. When infantile Convulsions are obstinate and long-continued in defiance of treatment, the brain may be suspected as involved, either primarily or secondarily; and one of the sad results in such cases is, that a repetition of the attack often follows, and Epilepsy may be the consequence, extending through youth and even to adult age. Indeed, Epilepsy and Insanity, during life, have often been the effect of infantile Convulsions. The attention of mothers should be particularly directed to the approaching symptoms, as more serious ones may be prevented by observing particularly the derangement of the system, or changes which excite this nervous irritability.

Treatment.—An Emetic promptly given, either of Syrup of Ipecacuanha or Antimonial Wine, the Warm Bath, Mustard Plasters to the arms and legs, with an opening injection to the bowels, will usually be found to afford early and effectual relief. The bowels should be kept open by small doses of Magnesia or Rhubarb. Relief will be obtained by immersing or placing the feet of the infant in Water as warm as can be borne, at the same time applying, over the head and temples, a piece of flannel wet with Cold Water, or sprinkling Cold Water in the child's face. This will often cut short the Fit. The gums should be looked to, and if they appear swollen or much inflamed and painful, lanced. I have known the most severe Convulsions to cease immediately after this operation.

The parental management of the infant, then, and by which much of the difficulty and danger of Convulsions or Fits may be removed, consists in a proper attention to cold sponging the infant's body, and friction, or rubbing it well, air, exercise, proper food, and attention to the bowels; for by duly regulating these, the system of the child will be less disposed to diseased action, and the recuperative powers of Nature will overcome any predisposition to this disease.

The Compound Tincture of Lobelia and Capsicum will be found a most efficient remedy in Convulsions. Give it in doses of one-fourth to one-half of a tea-spoonful every ten or fifteen minutes until it produces nausea or vomiting, when the Convulsions will be arrested.

If it can not be given by the mouth, use it as an injection, one teaspoonful to half a tea-cupful of Warm Water, and repeat as often as may be necessary. As in some families there is a constant tendency to Convulsions whenever the children become sick, it will especially interest them to know that there is a remedy which will keep them off. This is the Tincture of Gelseminum, which I would give to a child from one to two years old, in doses of eight or ten drops, every half hour or hour, until the symptoms of Convulsion had disappeared

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HOOPING-COUGH.

THIS complaint commences with hoarseness and sneezing, similar to a common Cold, redness of the face, and a watery discharge from the eyes and nostrils, with an unusual desire to sleep. After a longer or shorter continuance, a hooping sound is heard when the air enters the lungs during the coughing spell, and as this increases, an appearance of suffocation and vomiting, with which the paroxysm usually terminates. In an advanced stage of the disease, the child struggles for breath until relieved by a full inspiration, followed by the hoop. During the intervals the child appears as well as ever, but the frequency and severity of the Cough increase as the disease advances, which lasts, generally, for five or six weeks, when it gradually declines. In some cases, I have known the Coughing to last for five or ten minutes, and so violent as to exhaust the child, and compel it involuntarily to empty the bladder and bowels. The breath will often be lost for so long a time, that the face, lips, and neck will turn purple, and the eyes will be swelled almost out of the head. The child will frequently take hold of something in order to support itself during the Convulsion or fit of Coughing. This fit of Coughing is very often cut short by Vomiting. There is usually brought up by every fit of Coughing, a load of tough, glairy phlegm, which, in young children, is swallowed into the stomach; and by those who are older, is expectorated. The act of Vomiting not only throws off the phlegm which has been swallowed, but greatly relaxes the windpipe and lungs, and promotes the secretion of the mucus.

In the early stage of this disease, or in mild cases, there is little or no fever, but in a severe attack of this complaint, and especially in children who have weak lungs, the fever is often violent, and not unfrequently dangerous. Nevertheless, although mild cases require but very little treatment, severe forms of this disease, sometimes, by improper management or want of care, result in Inflammation of the Lungs, Dropsy, and Consumption. Hooping-cough is epidemic,

and, in different seasons of the year, is found to vary in severity. In the popular creed it is regarded as contagious, but physicians differ in their opinions upon this subject, for it obeys the laws of other epidemics, and its communication may be rationally ascribed to atmospheric causes, without the necessity of supposing actual contagion. That it depends on a specific atmospheric state, is too evident, and can not be doubted. A second attack is seldom known to occur.

When the skin is moist and warm, the appetite good, and the expectoration and vomiting free, the disease will commonly end favorably. The looser and the greater the quantity of phlegm discharged, the milder the disease will be. When this disease occurs in its mild and simple form in a healthy child, the termination is usually favorable.

Treatment.—The treatment of the disease consists chiefly in the use of Emetics and Expectorants, or such medicines as loosen the phlegm. You will find an emetic of Ipecacuanha, given occasionally, and rubbing the chest with Goose Grease or some other Liniment, constitute the best method of treatment of ordinary cases. Attention to clothing and diet is very necessary. The diet should be extremely light, and the child strictly guarded against the extremes of heat and cold. The Syrup of Squills and Castor Oil, in equal parts, given every day as long as the Cough continues violent, is an excellent remedy. The Tincture of Lobelia, either as an emetic, or in smaller doses, as an expectorant, is a valuable medicine, and probably as good a medicine as there is in use in this disease, for it will loosen the mucus and cause it to be thrown up, and thus clear the air tubes; it should be repeated according to the urgency of the symptoms, and the bowels should be kept regular by Castor Oil.

To procure sleep and rest from the violence of Coughing, it is sometimes necessary to use Dover's Powders, or Paregoric. It is, however, best, when they are used, to combine or mix with them Syrup of Squills or Syrup of Ipecacuanha, which will act both as a sedative and expectorant.

A late and very valuable remedy, highly recommended by Dr. T. Cook, of Philadelphia, a distinguished practitioner, is the Black Cohosh, or Squaw Root. Several eminent physicians have used it in a great many cases, and in all stages of the disease. It has seldom failed to produce decidedly beneficial effects, rendering the Cough less violent, and the Expectoration freer, and apparently in many instances bringing the disease to a quick termination. The saturated tincture is the most convenient form of administering it. For a child one year old, the dose is from 15 to 20 drops, four or five times a day; for a child that is three or four years old, from ½ to 1 tea-spoonful, in a little sweetened Water. The tincture is prepared by adding a pint of Spirits to two ounces of the Pulverized Root. It may be also used in decoction. In the mild and simple form of this disease, the

medical treatment should be one rather of prevention than cure, and the successful management consists in assisting, by watchfulness and care. The child should be warmly clad in cold weather, whether in the winter, spring or autumn. The diet should be light, and the child prevented from any exposure to damp, cold, or unfavorable changes of weather. This is the great source of danger in Hooping-cough. In the simple form of the disease, and that in which it most frequently and commonly presents itself, it is a mild disease, and, if carefully managed and watched over, certainly not a dangerous one. The Hooping-cough generally comes on in about two weeks after being exposed to it. If the bowels are confined, a mixture of Molasses with Castor Oil will relieve them. The taste of the Oil is entirely concealed, and children will gladly take it in sufficient quantities to secure the object desired. In many instances the free use of Molasses without the Oil, will be sufficient to keep the bowels open where there is any difficulty in inducing the child to take Castor Oil.

A most valuable remedy in Hooping-cough may be formed as follows: Take Extract of Belladonna, 10 grains; Alcohol, ½ ounce; thoroughly rub it up, and add Simple Syrup, 4 ounces; pulverized Alum, 1 dram. It should be given in tea-spoonful doses, every three, four, or five hours. Another, that has been used with much success, is: Take dilute Nitric Acid, 1 dram; Simple Syrup, 3 ounces; give in the same doses as the above. The Homœopathy remedy, Drosera, frequently acts like a charm; add 1 tea-spoonful of the Mother Tincture to a six ounce tumblerful of Water, and give a tea-spoonful every four hours.

The management of this disease, in mild cases, is very simple. If you will but attend to the diet, consisting of the lightest articles of food, given in small quantities, with simple drinks, such as Water, Toast Water, Apple Water, or Molasses and Water, which may be freely allowed, and avoiding exposure to cold, this complaint will terminate favorably, in nine cases out of ten, without the use of medicine or the attendance of a physician.

WORMS.

THERE are three kinds which infest the intestinal canal, namely: The Round-worm, the Pin or Thread-worm, and the Tape-worm. The Round-worm, varying in length, is from twelve to fifteen inches; the Tape-worm is from three to twenty feet in length; the Pin-worm is never more than an inch long. The Round-worm is of a whitish color, and chiefly infests the smaller intestines; they sometimes ascend to the stomach, and have even been taken out of the nose and

mouth. In general there exists but two, but occasionally as many as thirty or forty have been found. They are seldom met with in persons above fifteen years of age.

The Tape-worm is flat, half an inch or an inch wide, and is full of joints. I saw one of these worms which measured a hundred feet! This worm infests the upper part of the bowels, and feeds on the chyle. It produces a voracious appetite and great emaciation of the flesh; and this enormous desire for food, which is never satisfied, is, no doubt, occasioned by the immediate consumption of the chyle, or the worm feeds upon the extracted nourishment of the food.

The last to be described are the Pin or Thread-worms; they are never more than an inch or half inch in length, move very quietly, and infest the lower end of the bowels, are of a yellowish white color, and frequently creep out of the fundament. These worms produce an intolerable itching, and in children are often the cause of Convulsions or Fits, and frequently produce fever, irritation, and many other serious disorders of childhood. Costiveness, indigestion, improper diet, and the unhealthy secretions of the bowels, in weakly children, are among the causes producing Worms. A brisk, regular motion of the bowels would, no doubt, always prevent Worms from collecting in the intestines.

One of the symptoms of worms is a gnawing, uneasy feeling about the stomach, which is removed or diminished by eating. The appetite is deranged and variable, and often more than ordinarily voracious; the belly is hard and swelled, with frequent pains. There is picking of the nose, hiccup, disturbed or starting in the sleep, grinding of the teeth, and bowels costive. The child has a pale countenance, then again flushed; the eyes are sunken, and sometimes of a dark purple color underneath: the flesh becomes wasted, and the child is liable to convulsions. There is often great irritation of the nervous system. The grinding of the teeth, and talking during its sleep, or waking up screaming; a foulness or bad breath, and frequent pain in the bowels, and sickness of the stomach, are strong symptoms of Worms.

The Round-worm and the Pin-worm mostly infest children between the time of weaning and that of puberty. The Tape-worm is more common to grown persons, but I have known them in my practice to affect children likewise.

We once had a patient in Louisville, Kentucky, a girl, fifteen years old, whose case was apparently hopeless, to whom I administered Turpentine and Castor Oil. She felt the motion of the Worm in her stomach immediately, but it was not discharged from the bowels until she had taken several doses, followed by Columbo Root Tea,

when she passed it; it measured twenty-three feet. The dose given to her was half a table-spoonful of Spirits of Turpentine, mixed with an equal quantity of Oil, morning and evening. On the fourth dose, the medicine produced the desired effect, and she was entirely relieved.

Treatment. — To get rid of Worms, two important remedies are necessary — Purgatives and Tonics. The first, which is purgatives, is to clear away the animals which infest the human body; the second, which is tonics, is to correct the debility which usually favors their existence. The principal indication in the removal of Worms, is to excite a healthy action of the digestive organs. It is owing to a derangement of these that they exist. All bitter substances are the best medicines to expel Worms in children. Wormseed, mixed with Molasses, may be given in the dose of a tea-spoonful twice a day The dose for an adult is a tea-spoonful and a half of the seed. Wormwood Tea destroys Worms; Thoroughwort Tea, or Tansy Tea, is also a good physic; and Pink Root and Senna is a sure remedy. An ounce of each should be steeped in Water, and a quarter of the liquor given at a time, once a day, for four days in succession. The best plan of giving the Pink Root, medically called *Spigelia*, is first, for a day or two before administering it, to give a dose of Castor Oil or Aloes, Rhubarb, or Sweet Oil, increasing or diminishing the dose according to the age of the patient. Wormwood is an excellent domestic bitter, and will destroy Worms. Children may take from 10 grains to ½ dram, or as a weak tea.

Dr. Frank Stuart, of Philadelphia, mentions some remarkable cures made by the following infusion: Take Carolina Pink Root (*Spigelia Marylandica*), ½ ounce; Alexandria Senna (*Cassia Senna*), ½ ounce; Manna (*Fraxinus Ornus*), ½ ounce; Wormseed (American), ½ ounce; bruise all, and add to the powder 1 pint Boiling Water; let stand a short time in order to extract the strength of the articles; sweeten with Molasses, and add a small quantity of Milk. To a child five years old, give a gill, three or four times a day, on the empty stomach. If this does not purge, increase the dose until the effect is produced. Many large quantities of the long Round-worm have been expelled by the above valuable remedy. The following is very good: Take Wormseed Oil, ½ ounce; Oil of Tansy, ½ ounce; Oil of Turpentine, ½ ounce; Croton Oil, 2 drams; Castor Oil, 4 ounces; mix. To a child one year old, give half a tea-spoonful in a little Milk, for three days; then stop giving it for three days; and then resume, or give it for three days more.

For the Tape-worm, and also the Round-worm, the most powerful medicine is the Spirits of Turpentine; half a table-spoonful, mixed with Milk, may be given to a child between two and seven years of age, for a number of days in succession. Adults, or grown persons, may take one table-spoonful at a time, mixed with an equal portion of Castor Oil.

The Pin-worm, which infests the rectum or lower bowels, medically called *Ascarides*, which so greatly annoys young children and girls,

may be destroyed by a dose or two of the Elixir Proprietatis, which can be bought at a drug store, with directions; or by giving a dose or two of Aloes. An injection of Aloes, dissolved in warm water, will dislodge them. Aloes is a sure and certain remedy for this kind of worm; or an injection of common Salt and Water will frequently have the effect to remove them.

Worms sometimes ascend into the throats of children, and choke them. This may readily be removed by giving a little Salt and Water; repeating it occasionally will often expel them, and is always a preventive. It is a valuable remedy for different kinds of Worms; and even should none exist, it will cleanse the stomach and bowels, and prove very beneficial.

Worms, as well as many other disorders of children, are frequently owing to the general deficiency of SALT in the food, and especially the very young — those under one or two years, who are compelled to be fed. In their food you will always find abundance of Sugar, and very frequently no Salt, or a mere trifle. I have made it a common rule, when a child has to be fed, to tell the mother to *sweeten* the food with Salt, and add only a little Sugar to give it a taste, and always, I can say, with the happiest results. Every day unfolds some new remedy, and sometimes the most simple prove more efficient than active ones.

The fresh seeds of the common Pumpkin, in large doses of two ounces, pulverized, and taken every four or five hours, for four days in succession, have removed the Tape-worm. It is likewise stated that the root of the male Fern, found so abundant in the country, in our pastures, has been employed with the same success. The diet of all children or persons affected with Worms should be carefully regulated. Digestion should be promoted by the use of Stimulants and Bitters, and the bowels kept regular. The general system is to be strengthened by daily exercise in the open air; by the Cold Bath when the season permits, and by such Tonic medicines as will prevent the accumulation of these pests of the human family; use Barks, or infusion of Gentian, Wormwood, Poplar Root Bark, Quassia, Columbo, etc. By these means the system will be greatly strengthened, and the bowels regulated to their natural action, and the general health restored.

MUMPS.

THIS disease consists of inflammation of the salivary paratid glands, situated on either side of the lower jaw. It commences with more or less fever. Afterward a swelling at the angle of the jaw appears, and spreads gradually to the face and neck, in the vicinity of the gland, causing much difficulty and pain when the jaws are opened. On the fourth or fifth day, the swelling begins to subside.

This disease most frequently occurs in childhood and early life. The tumors or bumps sometimes appear on both sides; at others, only on one. These swellings are movable, hard, sore, and very painful, and often of a large size; indeed they sometimes become so large as to produce a difficulty of swallowing and of breathing. Other glands of the body are sometimes affected by these swellings. In the male, the testicles are sometimes greatly enlarged and inflamed. In women, the breasts partake of the same kind of inflammation. Mumps is a disease quite devoid of danger, if the patient is not much exposed to cold or damp weather; unless, as has occasionally happened, though rarely, the inflammation becomes suddenly transferred to the brain, testicles, or breast. When this is the case, these glands will sometimes suppurate or break, and cause considerable difficulty.

Treatment. — In most cases this disease is mild, requires only good nursing, and care that the body be kept warm and dry. Children should stay in the house, and be kept quiet, as violent exercise, or whatever stimulates the system in a high degree, may excite a disease of the brain, testicles, or breast, or cause more or less fever.

In mild cases, very little treatment is required, if the child is kept warm. If the swellings are painful, give a dose of Paregoric or Godfrey's Cordial, and get the child into a sweat with hot Herb Teas, such as Pennyroyal, Catnip, or Peppermint. If the bowels are bound or costive, give some gentle purgative; anoint the swelling with Opodeldoc Liniment, and apply round the neck a warm piece of flannel, or a clean woolen stocking, and retain for a day or two. If a purgative is necessary, give a little Epsom Salts, or Castor Oil. Let the diet be light and simple. In violent cases, if the swelling leaves the neck, and appears in the testicles or breasts, a Blister Plaster may be applied under each ear, to bring back the inflammation to its original seat. If the parts are very much swollen, Hot Poultices applied to the swelling will give relief; and if the pain and swelling are very severe, one or two Leeches may be applied to the swelled parts. In general, however, I have usually found the application of hot fomentations of Chamomile, or any Bitter Herbs, to afford speedy relief.

VACCINATION.

THE application of this valuable remedy requires care and judgment, and for want of these it has frequently failed. The first and most important point is to procure good Vaccine Matter; the next, to perform the operation properly, and the last, though not the least, that the child, at the time of Vaccinating, should be, as far as possible, in good health. The proper time for Vaccination is between

the age of five weeks to four months, or before the commencement of Teething. If the bowels are out of order, or any eruption or breaking out is on the body of the infant, it is better to postpone until it is better, unless some necessity should indicate Vaccination, such as the Small-pox being prevalent, or in the neighborhood.

It is, therefore, the duty of parents to protect their children from Small-pox, this dangerous and loathsome disease, by Vaccination. The preventive of this fatal disorder was introduced by the celebrated Dr. Jenner, who, by experiments, fully demonstrated that the virus of Cow-pox may be propagated from one human subject to another, through several gradations, and still retain the power of producing the affection regularly in all its stages, and of rendering those constitutions, which are infected, secure against the attacks of Small-pox. The inoculation with the Cow-pox, or Vaccination, through nearly a million of subjects successively, of whom many thousands were exposed to Small-pox without taking it, fully established the certainty of Vaccination by Cow-pox, as a preventive of this dangerous complaint, which, if it does not kill, is almost certain to disfigure.

We have had the opportunity of witnessing the efficiency of Vaccination. If any further proof is necessary to show the efficacy of Vaccination in preventing Small-pox, it may be found in the reports of our charitable institutions for the reception of children in the various cities throughout the United States. The Orphan Asylum, of Charleston, South Carolina, contained one hundred and fifty children; and not a single case of Small-pox or Varioloid occurred during the prevalence of that disease, although no additional restriction was imposed upon their intercourse with various families throughout the city.

In the aggregate, the number of children received into the Orphan Asylum of Philadelphia, since its establishment, is three thousand nine hundred and fifty-six. Among the whole there has been but four deaths from Small-pox, and these were found, on examination, to have no marks of Vaccination.

In the city of New York, the total number received in all the Orphan Asylums, is four thousand nine hundred and twenty-three; and although the Varioloid appeared in four or five of them, no deaths occurred from this cause. A similar result is also obtained from the records of the House of Refuge, which exhibit an aggregate number of two thousand six hundred and fifty-seven children received during sixteen years. If to the above we add the number of children received into the New York Alms-house, Long Island Farms, we have a sum total, during the last thirty-six years, of

twenty-four thousand two hundred and nineteen, with but ten deaths from Small-pox contagion. Although we can not ascertain the entire results of Vaccination, yet we may form a very just estimate of the benefits, by comparing them with the ravages of Small-pox among children, before the introduction of the Kine-pox or Vaccination. But even admitting that Vaccination does not entirely prevent an attack of Small-pox, it nevertheless deprives it, in a great measure, of its terrors, and reduces the mortality, which once made it one of the greatest scourges of mankind, to comparatively a small amount, or not one in thousands. "For example," says that learned and distinguished physician, Dr. Valentine Mott, of New York, "during the prevalence of epidemic Small-pox and Varioloid, out of two hundred and forty-eight cases of Small-pox and Varioloid, one hundred and fifty-five were unprotected by Vaccination, of whom eighty-five died; sixty-four Vaccinated, of whom one died; nine Inoculated, of whom three died." Such facts establish fully the salutary influence of Vaccination, and should at once remove every doubt as to this invaluable remedy, which has proved so great a blessing to mankind.

The Vaccine matter to be employed must be good; therefore, great care is required in the application of none but pure, healthy matter for the success of this process. For want of this, it has frequently failed, which may be regarded as one among the main causes of the want of success in its operation. Sometimes, from some peculiar state of the constitution or health of the child, the Vaccine disease will not take. Experience has long proved that weakly, unhealthy constitutions will not, in every instance, take Vaccination; these are, however, fortunately, very rare instances. Should this be the case, after a number of trials with fresh matter, let the child be left for a few months, until a change of the system, or its general health is improved, and then give it another trial. There are some individuals so constituted, that they happily pass through life without being susceptible of any contagious disease.

Some parents object to Vaccination upon the ground that it may introduce into the system some constitutional disease to which the person from whom the Vaccine virus, or matter, has been taken, is subject. This objection, we think, is well entitled to consideration; the danger should be carefully avoided. No prudent physician will run the risk of using matter taken from any person having scrofulous tendencies or diseases which affect the skin. Have your child vaccinated as early as circumstances will permit; it is quite a simple operation, and may be performed by any one of common sense. If the Vaccine matter is taken immediately from the pustule, or the scab,

or matter which is like cream, medically called *Pus*, it may be inserted in the flesh with a needle or pin. A little place may be scratched in the thick part of the outside of the arm, between the shoulders and the elbow, and the fresh matter rubbed in with the point of a pin or needle, or lancet. Another method is to lift the skin with the point of the lancet, and then insert the matter under the skin. When making this scratch or incision, be careful to draw no blood, as its mixing with the matter causes it frequently to lose its effect. This matter may always be taken from the pustule between the sixth and eighth day after Vaccination. After the eighth day the matter begins to lose its virtues, until a scab is formed, which appears to contain all the virtues of the freshest matter. The scab commonly comes off in about eighteen or twenty days. It can at any time be moistened with a little Warm Water, and made into a paste, or the consistence of cream, by putting it upon a piece of glass, and then with the point of a large needle, or lancet, inserted in the same way as before described, with the matter taken from the arm. After you insert the matter, be careful of the dress, so that it does not rub off, and let it have an opportunity of becoming dry, as no covering or dressing is necessary in Vaccinating. A scab may be kept good for a long time by cutting a hole in a piece of beeswax and putting it in the hole, and with the piece which has been cut out cover well. This is called hermetically sealed. When inclosed in this manner the scab will retain its virtues for years, if kept in a mild temperature, as extreme heat or cold decompose it.

Having thus endeavored to inculcate the practice of universal Vaccination, I believe I have offered all the remarks which are essential regarding this important subject.

Treatment.— Internal treatment in Vaccination is rarely required, except now and then a tea-spoonful of Castor Oil, if the bowels are out of order, or there are feverish symptoms. The principal thing to be attended to is the arm, to protect the vesicle, or the sore, from injury, particularly from the sixth or seventh day. If from friction or any other cause, inflammation and swelling around the pustule should become severe, you may bathe it with Cold Water, or apply a Bread and Water Poultice. But it is better, at least with but few exceptions, to permit Vaccination to pursue its entire course undisturbed until it forms into a hard, round scab, of a dark mahogany color, which generally falls off from the fifteenth to the twentieth day, leaving a permanent circular mark on the skin, depressed, and marked with six or eight minute pits. When one is specially exposed to this disease, it will not be amiss to attempt re-vaccination every seven or eight years.

MEASLES.*

THIS disease is usually preceded, for a few days, by a dry cough, hoarseness, frequent sneezing, and watering of the eyes, with more or less fever, as if the child had taken a severe cold. An eruption or pimples then make their appearance upon the surface of the face and neck, and soon over the whole body. As the disease progresses, these pimples run together in patches of irregular shape, and feel rough. The fever often increases after the eruption has fully appeared; the eyes are inflamed, and headache becomes severe, as the fever is aggravated. About the fourth or fifth day the rash is fully out; it begins to leave the face on the eighth day; and in a very short time after is scarcely perceptible. When the eruption subsides, the skin is covered with a whitish powder similar to meal, and scales of it fall off from the surface of the body. When the Measles are mild and regular in their progress, which is usually the case, and where careful attention has been paid to the child, this complaint requires only the mildest treatment and simplest remedies. But the consequences of Measles are often worse than the disease itself; they may be rendered severe, and even dangerous, by neglect or improper remedies, as the giving hot and stimulating drinks to drive out the eruption, or keeping the child in a hot room, covered with flannel and blankets during the fever and eruption; while at the same time they are drenched with Hot Toddy, Saffron Tea or Sheep Saffron, as the excrement or dung of the sheep is called, made into a decoction, for the purpose of driving out, and, at the same time, keeping out the eruption; by this improper means of treatment, inflammation of the Lungs is often produced, which is frequently fatal. Instead of this irrational application of external and internal heat, an opposite course should be pursued.

Treatment. — Very little medical treatment is required in mild cases of this disease. Cold drinks ought to be used, not only during the fever, but while the eruption lasts. Some cooling purgative may be given if necessary, and in mild cases no other treatment is required. In the latter stages of this disease, the occurrence of free purging often takes place, amounting to Diarrhea; this is to be regarded as beneficial, and any interference with it by astringents or anodynes to stop it, may be the cause of doing serious injury, and even produce dangerous consequences. Therefore, a knowledge of this fact is of great importance, as it may be the means of saving the lives of many children who would otherwise be exposed to a great risk. The pre-

*Scarlet Fever causes a similar eruption upon the skin to that which shows itself in Measles; for a treatise on that disease, see page 424.

cautions necessary in Measles are to exclude light from the eyes, and protect the child from exposure to cold air, a current of which might drive in the eruption. But Cold Water, one of Nature's best remedies, should never be denied the patient, under any circumstances, as indeed the craving thirst most plainly indicates, and to withhold it greatly increases the suffering and aggravates the disease.

Light food must be given. Whatever is necessary to sustain the patient should be of the simplest kind, and in a liquid form, with cooling mucilaginous drinks. Sponging or wetting with a rag the face, chest, arms, and hands, occasionally with Warm Water, to which add a little Vinegar, will greatly remove the heat, dryness, and itching of the skin, often very distressing at night.

The celebrated Dr. Dewees, of Philadelphia, calls attention to the use of Sulphur in cases of epidemic Measles. "There is," says the Doctor, "a curious circumstance highly interesting in the history and treatment of this disease." He states, that "at a period when Measles were epidemic, all the children who were under the treatment of Sulphur, for Itch, escaped the disease; and that those who were taking Sulphur for the Hooping-cough enjoyed the same immunity." He also says, that "Many children who were taking a mixture of Sulphur and Camphor, and to whom these medicaments were applied by friction, were not attacked by Measles, while those who were not subjected to this medicine were affected."

Those who, from exposure to the contagion, are liable to have this disease, should be warmly clad, and should avoid all undue exposure to cold and wet weather. The feet, in particular, should be kept warm and dry. We close this subject by saying, when properly managed, Measles can not be considered as a dangerous disease, unless aggravated by the above causes, which, undoubtedly, predispose to dangerous inflammations.

INFANTILE REMITTENT FEVER.

THIS is a low grade of irritative fever to which young children are frequently subject, occurring most usually during the latter months of Nursing, or before Weaning, and generally at the time of Teething. There is always more or less irritation and excitement induced by the process of "cutting teeth," accompanied often with flushes of heat, redness of one or both cheeks at times, disorder of the bowels, fretfulness, loss of appetite, etc. When this state of things continues, and settles into a regular, well-developed fever, with periods of exacerbation and remission, more or less marked, it is called Infantile Remittent Fever. It is probably what may be called purely an irritative fever — arising from the irritation caused by the

process of Teething, or from Worms, or some other irritating cause in the system, as unwholesomeness of the food.

When the disease is fully developed, it will be marked with restlessness at night; a hot, dry skin, which continues till near morning, when the skin becomes moist, especially on the face and chest. During the forenoon the little patient is apt to be free of fever, but looks pale, and shows by its expression that it is evidently sick. It takes but little notice of things or persons about the house; seems sad, serious, showing no disposition to play, and has generally a very poor appetite, showing less disposition to nurse or take food than when the fever is on. The pulse is quick and wiry, or hard. In the afternoon there will likely appear a red spot on one of the cheeks, and after a little, on the other, as the first symptoms of the returning fever. The skin, by and by, becomes hot and dry again; the pulse quicker and stronger; the child is apt to be sick at the stomach and vomit occasionally, especially if it nurses. The urine is scanty, high colored, and is passed at frequent or short intervals—induced by its scalding and irritating character. The child is now apt to be fretful and restlesss from this on till the fever remits again in the morning.

After the disease has continued for some days, the lungs are apt to become affected, attended with a cough, perhaps a rattling in the throat, caused by the secretion of mucus in the air passages. The bowels are always more or less out of order in this disease. The discharges are of an unhealthy or unnatural color—sometimes of a dirty brown, but more generally of a greenish color, or mixed, like scrambled eggs, or of a light color and curdled. They are very offensive. The disease is apt to become worse, as it continues, until the child lies a great portion of the time, when the fever is off, in a stupid, comatose state, showing that the brain has become affected. And this is the great danger in this complaint—the affection of the brain, or rather the membranes of the brain. Thousands of children die annually from Inflammation of the Brain, brought on just in this way. It is not always the case that the brain becomes affected; yet in a majority of cases it is probably true that the brain is more or less affected, if the disease continues to any considerable length of time: while in many cases, for the want of proper judgment and precautionary measures, the brain or its membrane is allowed to become so seriously implicated as to pass beyond remedy.

Treatment.—The disease may terminate favorably, of itself, without the use of medicines. In many cases it unquestionably does. In such cases it will generally run about twelve to fourteen days, where the child is of a robust and naturally healthy constitution, the mother at the time in a good state of health, and the child otherwise is properly taken care of—well clothed, well nursed, frequently

bathed, kept clean, and from all undue exposure. If the disease is likely to terminate favorably, it will begin to decline, the paroxysms of fever growing lighter and of shorter duration, about the fourth to the seventh day, and gradually disappear at the end of about two weeks. But it is always best to make use of some safe and judicious remedies. In the first place, examine the gums closely, and if they are swollen at any point, and there is a clear indication that one or more teeth are about to appear, the gum may be cut freely, down to the teeth, with a gum lance, or sharp instrument, as the point of a small penknife. A physician, or some one who understands the matter, should be engaged to do it.

If the bowels are in a bad condition — as will generally be the case — some suitable medicine should be given. There is probably nothing better for this purpose than the Neutralizing Cordial. It can be improved by adding to it a portion of Chamomile Flowers, in preparing it; or if you procure the Cordial already prepared, make a little strong tea or decoction of Chamomile Flowers, and add to it — in the proportion of about one-fourth or one-third of the Chamomile decoction to the amount of the other. If you prepare it yourself, add about half an ounce of Chamomile Flowers to an ounce of the Neutralizing Powders, and steep in half a pint or two-thirds of a pint of Boiling Water, for an hour, then strain and sweeten. Give in doses of one to two tea-spoonfuls three or four times a day, and continue for several days, or until you change the color and consistency of the evacuations, to something like a healthy condition. This medicine is perfectly harmless and safe, and may be given freely without fear of injury. Ten to fifteen drops of Sweet Spirits of Nitre may be given also, three times a day, for two or three days, to act on the kidney and urinary organs, and also to relieve the fever. A little Spearmint Tea is an excellent thing in which to give the Spirits of Nitre, and is a very useful tea or remedy in this disease. Let the child drink of this tea, as much as half a tea-cupful or more a day, if it will, cold or warm. Horsemint Tea is also good.

It will also be necessary to make use of some tonic or anti-periodic remedies. It is very difficult to get a child so young to take Quinine, no matter how prepared or disguised. You can not overcome the bitter taste. If you will take a little Dogwood and Poplar Bark, say an ounce or so of each; Cloves, ½ ounce; Allspice, ½ ounce; Nutmeg, ½ ounce; Cinnamon Bark, ½ ounce, and Ginger, ½ ounce; boil them together slowly in about three pints of water, down to half a pint, then strain, and sweeten well, so as to make a syrup, you will have an excellent preparation, answering well in the place of Quinine, in all cases of Intermittent Fever, Chills and Fever, etc., of children. This should be given in doses of one to two tea-spoonfuls every hour during the forenoon, or while the fever is off. It should be continued for several days, or till the fever is broken. If you conclude to use Quinine, take 2 ounces of Water, in a vial; drop into it 5 or 6 drops of Sulphuric Acid, 5 grains of Tannin, and 10 grains of Quinine. Shake well to dissolve. The Tannin (or Tannic Acid) is the best thing known to destroy or disguise the taste of Quinine.

It can be had at any drug store. You can give, of this preparation, in doses of half to a whole tea-spoonful, according to the age of the child, in a little syrup, or milk, or any thing the child likes, and repeat (as recommended for the other) every hour or two during intermission. Continue till all is taken—giving, however, not more than one-fourth of this quantity, or say four tea-spoonfuls, during one day.

Another good measure is to bathe the abdomen, or, indeed, the whole body once a day, with a strong decoction of Dogwood Bark, made by boiling the bark; or Dogwood and Poplar Bark. The bark of the Quaking Ash (*Populus Tremuloides*) is quite as good as either of the others. These are powerful bitter tonics, and thus applied will act through the medium of the skin by absorption. Another plan is to make a poultice of an ounce, each, pulverized Peruvian Bark (Cinchona), Ginger, and Nutmegs, using a handful or so of Wheat Bran, or a little Corn-meal, and sufficient hot water to form a poultice of proper consistence. Apply this warm to the whole abdomen, and let remain on all day, or night. It should be remoistened, when it becomes dry. Should there be symptoms of the brain becoming affected, which will be indicated by a sort of stupor, and sleepy disposition of the patient, something more irritating must be applied to the abdomen, to act as a counter-irritant to the brain. A little ground Mustard and Cayenne might be mixed with the above poultice; or a regular Mustard Plaster applied, both to the abdomen and to the back of the neck, and the feet or ankles. Active measures must be made use of in case there is likely to be a determination of the disease to the head. An active Cathartic or Purgative should be given, and repeated every other day; cold applications to the head; and active counter-irritants to the abdomen, extremities, and back of the neck. As a Purgative in this case, there is nothing better than the Podophyllin, if so good, as it requires such a small quantity for a dose. Take three grains, divide into six powders, and give one every three hours, in a little Mint or Ginger Tea, sweetened, until it operates. A strong infusion of Senna and Jalap, and Cream of Tartar, made into a syrup, is also a good purgative in such cases. Or what is the same thing, take an ounce of the Anti-bilious Physic, make an infusion by steeping in half a pint of boiling water, letting it simmer slowly for a few minutes, strain, add to it an ounce of Cream of Tartar, and four ounces of White Sugar, simmer a few minutes to dissolve the Sugar, and it is ready for use. This may be given freely in tea-spoonful doses, every two or three hours, till it operates thoroughly. It is one of the best and safest purgatives known, for persons of all ages, and in all conditions. The object of physicking so thoroughly in this disease, under the circumstances named, is to withdraw the blood and fluids away from the brain, by way of the bowels, by producing a counter-excitement or irritation. It is only necessary where there is a tendency of the disease to the head, which tendency can often be prevented in the first place by an active Cathartic.

Attention must also be paid to the skin. Very often a Warm Bath

night and morning, rubbing the body well afterward; a moderate use of the Neutralizing Cordial, or Syrup of Rhubarb and Magnesia, and the Sweet Spirits of Niter, will be all that is necessary.

HINTS TO PARENTS.

THE real object of education is to give children resources that will endure as long as life; that time will ameliorate, not destroy; occupation that will render sickness tolerable, solitude pleasant, age venerable, life more dignified and useful, and death less terrible. The early instruction imbibed from a parent's life, has the strongest influence in forming the future character. Before the mind is mature enough to think for itself, we look to those whom Nature has constituted our guardians, to correct and sanction our opinions. In this way the parental authority gains a hold upon the minds of children that never can be annihilated. And happy, indeed, would it be if the result were always the formation of a noble and manly character. The contemplation of the period of childhood — the earliest spring-time of human life — is replete with the most tender interest. We should remember that the system of the child is capable of constant modification; hence it is our duty, as well as in our power, in a great degree, to impart, both mentally and physically, that standard of health so essential to the happiness of the child. Of all the acts of folly and cruelty of which parental blindness can be guilty, there is none more to be lamented than that which, from the pride of display, or even the more generous desire for improvement, induces any one to press on infancy the task fitted for youth, or demand from youth the wisdom of manhood. It is rending and scattering the blossoms in order to reach the fruit, which, if obtained, is immature, unnatural, and therefore unpleasant; it is the conduct of an Egyptian task-master demanding a work without the material which forms it — an arraigning of the wisdom and providence of God, who, in rendering man the most perfect of His creatures, has yet evidently made his progress the slowest toward the attainment of his powers.

That indolence must be conquered and industry excited in children, there is no denying. Can the recitation of the most difficult subjects, or intense study at ten years old, the power of playing difficult music at sight by fingers not half grown, or any of the wonders we see and hear so much of, repay a blooming girl for the roses that are vanished, the breath that is shortened, the appetite that is fled, the spine that

is curvating, the sense of joyful existence which once danced in her eyes, vibrated through her nerves, and was heard in every thrilling accent? While the energy of the vital system is uninjured, and its manifestations in the various organs are in due harmony throughout with the state of the structures with which it is associated, all the operations of the body are duly and steadily performed. This is the condition which may be termed *health.* But as soon as the mental powers are overtasked, a change takes place throughout the whole system, and *disease* supervenes.

At any time of life, excessive and continued mental exertion is hurtful; but in infancy and early youth, when the structure of the brain is still immature and delicate, permanent injury is more easily produced by injudicious treatment than at any subsequent period. In this respect the analogy is complete between the brain and the other parts of the body, as is exemplified in the injurious effects of premature exercise of the bones and muscles. Scrofulous and rickety children are the most usual sufferers in this way. They are generally remarkable for large heads, great precocity of understanding, and small, delicate bodies. But, in such instances, the great size of the brain, and the acuteness of the mind, are the results of morbid growth, and even with the best management, the child passes the first years of its life constantly on the brink of active disease. Instead, however, of trying to repress its mental activity, as they should, the fond parents, misled by the promise of genius, too often excite it still further by unceasing cultivation and the never-failing stimulus of praise; and finding its progress, for a time, equal to their warmest wishes, they look forward with ecstasy to the day when its talent will break forth and shed a luster on their name. But in exact proportion as the picture becomes brighter to their fancy, the probability of its becoming realized becomes less — for the brain, worn out by premature exertion, either becomes diseased or loses its tone, leaving the mental powers feeble and depressed for the remainder of life. The expected prodigy is thus, in the end, easily outstripped in the social race by many whose dull outset promised him an easy victory.

To him who takes for his guide the necessities of the constitution, it will be obvious that the modes of treatment commonly resorted to should, in such cases, be reversed; and that, instead of straining to the utmost the already irritable powers of the precocious child, leaving his dull competitors to ripen at leisure, a systematic attempt ought to be made, from early infancy, to rouse to action the languid faculties of the latter, while no pains should be spared to moderate and give tone to the activity of the former. But instead of this, the

prematurely intelligent child is generally sent to school, and tasked with lessons at an unusually early age; while the healthy, but more backward boy, who requires to be stimulated, is kept at home in idleness merely on account of his backwardness. A double error is here committed, and the consequences to the active-minded boy are not unfrequently the permanent loss both of health and of his envied superiority of intellect.

INFANTILE DIARRHŒA.

INFANTS are very subject to diarrhœa, and I fear that many a child has been lost simply from allowing diarrhœa to continue, which would have been easily checked. Anything of an irritating character will very soon disorder the delicate mucous membrane of the intestinal canal of an infant, and a very simple remedy administered at the proper time will stop it, but if the purging be severe, and it be allowed to continue for a few hours, extreme exhaustion may ensue, and be soon followed by death. In these cases, mothers often make the unfortunate mistake of feeding the child too much. Fearing lest it should be starved, they keep pouring in milk. The secretions, already out of order, get worse, and the milk is either rejected in the form of curd, or the curd formed is passed onwards into the small intestine, where it excites irritation without being taken up and absorbed. Thus the intestinal canal, in every part of its course, becomes filled with firm white coagula, which constitute the greater part of every evacuation. After death from violent diarrhœa it is not uncommon to find the *intestines* even distended with coagulated and undigested curd.

Cases of diarrhœa in infants may often be relieved at the outset by small doses of Lime Water. A little may be mixed with the milk, in the proportion of a tablespoonful or less of lime water to half a pint of milk. Sometimes Potash Water answers better, and I have used it in the proportion of twenty drops to half a pint of milk. You must not allow the child to take as much milk as it likes. For a day or two, half a pint of milk in the twenty-four hours will be sufficient. Time must be allowed for the alimentary canal to become partially emptied of its irritating contents before fresh nourishmemt is introduced. If the child is at all low, it must be supported with small doses of brandy—from ten to twenty drops in a teaspoonful of water or milk and a little sugar, once in two hours. You cannot be too careful in watching cases of infantile diarrhœa, especially in weak children, for it sometimes happens that serious exhaustion comes on quite unexpectedly. Within a few hours a sudden change may occur, and the case may be hopeless before you are aware of it.

In these cases of diarrhœa, bacteria often grow and multiply to an enormous extent in the caseine clots. The changes which ought to take place in the food prior to its absorption and conversion into healthy blood are consequently prevented. Children may, under these circumstances, die of inanition, although liberally fed during the whole period of the illness. The food they are plied with merely serves to encourage the growth of bacteria, and it undergoes changes which interfere with its digestion and absorption. If just at the right time you withhold food, perhaps only for a few hours, everything may right itself; the irritating matters may themselves act a little on the bowels, and thus get pushed onwards by the contraction of the muscular coat of the intestine. Diarrhœa may come on and last for a few hours or so, or even for a day or two, and then the secretions return to their natural state. The child will be out of danger and soon be well again. In treating diarrhœa in children, particularly infants, you must take care that the child is kept warm. One of the principal causes of diarrhœa is cold, and bathing in cold water, and exposure to cold and wet will sometimes bring on diarrhœa, even in adults.

You should be aware of the different characters of the stool in different forms of diarrhœa. If they are of the natural color and odor, you may let the diarrhœa go on for a while, for it will probably do no harm, and will most likely

stop without medical treatment. But if the stools should emit a sour smell, and the secretion should have the appearance of rice water, it will probably be necessary to check the discharge. You will find in such evacuations much altered mucus, and not unfrequently you will find a little blood. If the increased formation of mucus continue for a considerable period of time, it is often associated with a serious change in the tissues of the mucous membrane itself. By the continual drain of nutrient matter of the bowel, a low state of health may soon be induced, which may soon lead to the development of a very serious disease in Dysentery. See *Summer Complaint.*

SEVENTH DIVISION.

SURGICAL TREATISES.

WOUNDS AND INJURIES.

WOUNDS are divided into several kinds, according to the instruments or agents, generally, by which they are made; as—

1st. Incised Wounds, which are made with a sharp-cutting instrument—a common cut, or incision with a knife, is an Incised Wound.

2d. Punctured Wounds, which are made with a pointed instrument; as a needle, a nail, or a bayonet. Sometimes a wound is both punctured and incised, as when made with a dirk, which both *punctures* and *cuts.*

3d. Lacerated Wounds, as when done with a rough or dull instrument, as a saw, or stone, or when torn and lacerated.

4th. Contused Wounds, which mean simply *bruises*, the skin not being severed or broken, but the parts beneath becoming black or blue, or "bloodshot."

5th. Gunshot Wounds, made by a ball discharged from a gun or pistol.

Besides the above, there are what are called Poisoned Wounds, such as are occasioned by the bite of snakes, and other poisonous reptiles.

Treatment.—The first thing to be done in the treatment of a wound, especially where bloodvessels are severed and there is much hemorrhage, is to *stop the bleeding.* If the bleeding is but slight, or there is no artery severed, the free application of Cold Water may be ufficient to check it; or Salt and Water, or a solution of Alum in Water. If these fail, and the wound is open or lacerated, sprinkle on a portion of powdered burnt Copperas; to make which, burn upon a hot iron shovel a portion of Copperas, until it decomposes and becomes dry and of a red color; then pulverize it, and it is ready for use. It forms an excellent styptic for such purposes. After sprink-

ling on a quantity of this, enough to thinly cover the surface of the wound, or the parts of it from which the hemorrhage proceeds, place over it a bunch of lint or cotton, or a bit of old muslin folded, and apply a bandage.

If an artery has been severed, which you will know by the blood being of a bright red color, and coming out in jets or spurts, caused by the pulsations of the heart, the only certain way to stop it is to tie the artery. If it can not be done, and the bleeding is very profuse, you must send for a physician. If the wound is upon either of the extremities, you can stop the flow of arterial blood for the time being, and until a physician can be brought, by tying a cord tightly around the leg or the arm, as the case may be, so that it be above the knee or the elbow, as well as above the wound. There being but a single bone in the thigh and in the upper arm, you can, if you make the ligature tight enough, stop the flow of arterial blood entirely, in the parts below it. But if the wound is in some other part of the body, as on the trunk, the head, or neck, and the patient is likely to bleed to death, if the hemorrhage is not soon stopped, you must look for the artery, get hold of it, and tie it. This you can do if you will but try sufficiently. Wash out the wound with Cold Water, and then watch for the place where the *light red blood* spurts out; get hold of the artery either with a pair of forceps, or tweezers, or with your fingers; if you do not succeed the first time, keep trying till you do; draw it out a little, and have some one to tie it with a silk or flax thread, which you will leave long enough for the ends to hang out of the wound, by which the thread can be drawn out when the artery sloughs off and the wound is sufficiently healed. If a large vein is severed, instead of an artery, the blood will be of a dark purple color, and will flow out in a steady stream. If you can not stop it by other means, it must be tied, the same as an artery.

Having succeeded in stopping the hemorrhage, and having removed any extraneous or foreign substances that may have been in the wound, as splinters, dirt, sand, or any thing of the sort, you will proceed to bring the lips or edges of the wound together, so that it may heal, if possible, by what is called *the first intention*. This can be done in

INCISED WOUNDS.

FOR this purpose you will need what is called an Adhesive Plaster. Cut it in strips from a quarter of an inch to an inch in width, according to the size of the wound, and long enough to reach over each side far enough to adhere well to the sound skin and hold the lips of the wound together. Bring the edges of the wound together carefully, and as close as you can; warm the strips of plaster a little, and stick them on, across the wound, leaving a little space between each to allow any fluid to escape that may run from the wound. Place over the strips a bunch of lint, or cotton, or compress of muslin, and over this a bandage.

Treatment. — Many physicians and surgeons recommend nothing to be applied to a fresh wound, in the way of medication, but Cold Water. In a majority of cases, perhaps, this will be all that is necessary, except that a little Tincture of Arnica might be added to the water with advantage, in the proportion of thirty drops to a pint of water, and then pour the water from one vessel into another, several times, to mix them well. With this moisten the pledget, or compress, three or four times a day. The Arnica, however, is more suited to Contused and Lacerated than Incised Wounds. One of the best preparations for fresh wounds, cuts or bruises is pure Laudanum. Pour on to or into the wound a little of this twice a day, and keep the compress moistened with Cold Water, and it will be all the treatment necessary, unless suppuration takes place.

PUNCTURED WOUNDS,

IF very deep, should not be allowed to heal at the surface very speedily, and consequently should not be closed up with Adhesive Plaster. They are very apt to become inflamed and suppurate, and may lead to very serious consequences, if allowed to heal by the first intention at the surface. If you have reason to believe that tendons are injured by the wound, treat it as directed under the head of "Lockjaw." If the wound is of a serious nature and there is threatened inflammation, active Hydragogue Purgatives will be necessary, as the Anti-bilious Physic and Cream of Tartar, and the patient may also take a dose of Laudanum or Opium occasionally.

LACERATED WOUNDS

HARDLY ever heal by the first intention. There is one favorable circumstance about Lacerated Wounds, however; they are not apt to bleed so much as Incised Wounds. You can generally stop the hemorrhage sufficiently by the application of Cold Water, or a solution of Alum or Salt, or at any rate by the use of the Styptic Powder I have named. You should, however, do all you can to prevent inflammation, or make it as light as possible. After you have checked the hemorrhage and cleansed the wound, bring the part and edges together as well as you can, and retain them by means of strips of Adhesive Plaster, and, if necessary, sutures, or stitches with a needle and thread; then, in order to the process of healing by the first intention and to prevent inflammation, wash the whole wound with a solution of Nitrate of Silver, about the strength of 10 grains to 1 ounce of Water; and continue to apply a little of this once a day, by pouring it into the wound, and once a day the Tinctures of Aloes and Opium — using one, say in the morning, and the other in the evening. I consider the Nitrate of Silver the best and most certain anti-inflammatory agent known. Any Incised Wound, I care not how large it may be, and almost any Lacerated Wound, if not too badly mangled, may be made to heal by the first intention — that is, without inflammation and suppuration — by the judicious use of

this article in solution. It may sometimes be wel. to use it at first as strong as 20 grains to 1 ounce of water, gradually reducing in after applications.

CONTUSED WOUNDS—BRUISES.

NO better application can be made to wounds of this character than "Pond's Extract" of Witch Hazel, or, perhaps, the Tincture of Arnica in Cold Water, in the proportion of thirty or forty drops (not more) to a pint of Water. A little of the Tincture should always be kept on hand by every family. Keep the wound wet, by wetting the compress several times a day with the water containing the Arnica, and if the wound is extensive, or there are any internal bruises, let the patient take a spoonful, two or three times a day, of the same dilution, or of one containing ten drops of the Tincture to a tumbler of Water. A purgative may also be necessary, in case of internal injury.

GUNSHOT WOUNDS.

IN case it is a bad one, or the ball has lodged in the body or part, of course it will be necessary to have a physician or surgeon. If the ball has passed through, and the wound is not serious, it can be treated as any other Punctured or Lacerated Wound.

POISONED WOUNDS.

I HAVE already given, under the proper head, the treatment for "Snakebites." For the bites of other reptiles, and stings of insects, as spiders, scorpions, and the like, Sweet Oil is the remedy, to be taken internally, in quantities proportioned to the severity of the case, and applied externally. The application to the part of Aqua Ammonia is good for the sting of the wasp, hornet, bee, yellow-jacket, and the like. So also is the juice of the common Yard Plantain. Indigo and Vinegar are also said to be good.

WOUNDS OF THE HEAD.

THESE are usually more dangerous than wounds on other parts, because the brain is liable to be injured. In treating a wound of the scalp or head, the hair should first be shaved off; then remove extraneous and foreign substances, if any in the wound; stop the bleeding, and bring the divided parts together as well as you can, and confine them with strips of the Adhesive or Sticking Plaster. If the skull is fractured, and some portion of the bone depressed upon the brain, it should be raised, if possible. If you can not do it, send for a physician. Treat as directed for Incised and other Wounds. If there is danger of Inflammation of the Brain, give active Cathartics make Cooling Applications to the head, and bathe the feet in Warm Water.

CONCUSSION OF THE BRAIN.

IN Concussion of the Brain, which is caused by blows on the head, or falling with the head upon a hard substance, causing stupor, insensibility, and perhaps vomiting, bleeding at the nose, etc., give active Cathartics and Purgative Injections, with Cooling Applications to the head; bathe the feet in Warm Water, and then apply Mustard to them, over the stomach and between the shoulders. Do not bleed the patient.

WOUNDS OF JOINTS.

WHEN a joint is wounded, as the knee, for instance, the limb should be placed in that position which will best allow the edges of the wound to come together; and then all motion or use of the joint, for the time, must be avoided. In other respects, treat as other wounds. If there is much discharge of the synovia fluid, or the joint-water, you should endeavor to check it the same as if it were hemorrhage of blood, by the application of astringent liquids, or a little of the Red Styptic Powder, or Burnt Copperas. If Swelling and Inflammation, apply the Elm Poultice, and heal with the Black or All-healing Salve.

PROUD FLESH.

SOMETIMES in wounds that do not heal by the first intention, but inflame and suppurate, and become a running sore, there will occur a *fungous* growth, called usually "Proud Flesh," which will prevent the wound from healing. When this is the case, sprinkle on this fungous portion a little powdered Burnt Alum, or Blood Root, a few times, and if these should fail to remove it, use the Vegetable Caustic, or Caustic Potash. Then poultice, and use the Black or some other good Healing Salve.

FRACTURES AND DISLOCATIONS.

IN all cases of fractures of bones or dislocations of joints, unless there is some one present or near by who sufficiently understands the mechanism of the human frame and is fully competent to the task of managing the case, a physician should be sent for at once. The friends or persons present, should, in the mean time, make use of such measures as the urgency of the case seems to require. If the injury is a compound fracture, by which is meant that not only the bone is broken, but that the skin and flesh are also separated and torn, so that the ends of the bones, perhaps, project, and there is much bleeding, proper efforts, such as have already been indicated for the purpose, should be made to check it, and, if need be, take up and tie an artery or vein. If the patient suffers much pain, he might also take a dose of Laudanum and a little Spirits.

In case of a dislocation, if there is no one present that can reduce it, that is, put the head of the bone back again into its place—and

there is likely to be swelling of the part, more or less — there should be constant applications made to the part of Warm Water, as hot as can be borne, by means of cloths, until the physician arrives. This will prevent the swelling, and keep the parts in a relaxed condition, both of which are highly necessary. If the parts have swollen much the free application of Hot Water will reduce it, and relax the muscles, so that the reduction, or replacing of the bone, can much more easily be effected.

ULCERS AND OLD SORES.

MEDICAL writers usually divide Ulcers into several kinds — 1st The Healthy; 2d. The Specific; 3d. The Irritable; 4th. The Indolent; and 5th. Varicose.

HEALTHY ULCER.

THE Healthy Ulcer, if it is proper to call it an Ulcer at all, is one that heals up by healthy suppuration and granulation, without difficulty, such as usually results from wounds that do not heal by the first intention. Should it not heal thus readily and healthily, it becomes an Ulcer belonging to one of the other classes. The Healthy Ulcer (See "Treatment of Wounds") seldom requires any thing more than poulticing, and the use of some good Healing Salve.

SPECIFIC ULCER.

THE Specific Ulcer is such as attends a particular or specific disease, as Syphilis, Scrofula, and the like, which will be found properly treated of under the diseases to which they belong. It, therefore, remains for me to speak particularly of the remaining three kinds.

THE IRRITABLE ULCER.

YOU have an Ulcer, no matter where; it may be on the hand, the foot, or the leg, or any where else. It is very sore to the touch, tender, and easily made to bleed. It is of a red, or dark purplish appearance; discharges but little matter, that of a thin, watery, or bloody character; it may be very corroding and fetid. The granulations in it are spongy, imperfect, and of a dark red hue. The Ulcer is bounded by a sharp, overhanging or shelving edge, sometimes ragged, or what is called serrated, that is, like fine saw-teeth. The parts around the Ulcer are red and swollen, and usually hard. This is an Irritable Ulcer

Treatment.— The treatment should be of the most soothing and emollient kind, such as warm fomentations, warm poultices, and soothing applications. One of the best is the Carrot Poultice. If the irritability is very great, the poultice should be moistened with the infusion of Lobelia Herb, or a little Laudanum. Fomentations of Hops and Poppy Leaves are excellent. Continue such applications till the soreness and inflammatory tendency are removed. Sometimes dry applications will be found to have a better effect than moist; such as sprinkling on common Flour, or pulverized Chalk or Magnesia. These may be used for a few days, in alternation with Poultices and Fomentations. Do not compress or bandage very tightly.

If there are constitutional symptoms, such as thirst, chilliness, and feverish symptoms, nervous prostration, and irritability, the general system must be attended to. If the skin is dry and harsh, the Alkaline Bath, that is, sponging and washing the whole body with warm water, in which a little Saleratus has been dissolved, should be employed once or twice a day. If the bowels are disposed to be costive, mild Cathartics must be given. It may be well to give an occasional Emetic, and make use of means to produce a healthy perspiration and action of the skin.

When the irritability and pain have been removed from the Ulcer, change your applications to simple dressings, such as some good Healing Salve or Ointment. The Black or All-healing Salve is very good.

THE INDOLENT ULCER.

THIS is the most common Ulcer to be met with, and is exactly the reverse of the Irritable Ulcer, in almost every respect. The edges of the sore are *everted*, instead of *inverted;* that is, they turn out, instead of hang over, and are rounded, thick, glassy, and quite regular. The granulations in the Ulcer, instead of being red and sensitive, are quite insensible to the touch, of a dull pale appearance, and are generally located at the bottom of the excavation or sore, being, in short, of a fungous appearance and character. The secretion or matter, instead of being thin and watery, is thick, of a yellowish color, and adheres quite firmly to the base of the Ulcer.

Indolent Ulcers are often very difficult to cure. They occur most frequently on the lower extremities, about the legs and ankles, and are oftener to be met with in males than in females.

Treatment. — The treatment of this class of Ulcers, like the symptoms, is the very opposite of that of the Irritable Ulcer. Stimulating applications are to be made, the first effort being to change the sore from its sluggish, indolent character to a healthy activity.

If there is fungous or callous growth in it, apply the powdered Vegetable Caustic, or powdered Blood Root; sprinkle on freely, and cover with a plaster of Salve, or a Poultice. This course will, in a day or two, loosen the pus, or matter in the Ulcer, so that it may be washed out clean. Wash out with a strong solution of Saleratus,

and occasionally with a solution of Nitrate of Silver, about the strength of twenty grains to an ounce of water. Apply it with a feather. If the edges are hard and swollen, touch them with the Lunar Caustic, and it may be well to scarify them a little with a sharp instrument; after which apply warm Fomentations or Poultices. By the free application of Caustics, either in powder or solution, or both, once or twice a day, and softening Poultices, you will effect such a change in the character of the Ulcer, that in the course of a few days it will most likely assume a healthy appearance and begin to heal. If it becomes irritable and inflames, apply Emollient Poultices, the Carrot or Elm Poultice, till the inflammation and irritability are reduced.

The next step will be to heal up with proper Salves. One of the best I have used in such cases is the Green Salve, made as follows: Take Rosin, Beeswax, and Lard, each, 1 ounce; Verdigris, 1 dram, ground in Oil; mix, and stir till cold. Dress twice a day; each time washing out the Ulcer with a lotion composed of equal parts of Tinctures of Myrrh, Aloes, and Blood Root.

If any fungous or proud flesh appears, sprinkle on the powdered Blood Root, or Burnt Alum, or Vegetable Caustic, and occasionally wash out with a solution of Nitrate of Silver. In very indolent cases, it may be well to apply occasionally a rag wet with the solution of Nitrate of Silver, carefully protecting the sound parts around the Ulcer. Leave this on for a few hours, and then apply the salve. The worst Ulcers may be made to heal by the free use of Nitrate of Silver, in solution, even when every thing else seems to fail. It may be necessary to apply the Caustic Potash occasionally to the edges of the Ulcer, or to touch them with a piece of the Lunar Caustic. The Black Salve may be used instead of the Green, or in alternation with it, using the one a few days, and then the other. Salve for this purpose is prepared as follows: Rosin and Beeswax, each, 2 ounces; Sweet Oil, 8 ounces; add, when near the boiling point, 4 ounces of Red Lead; stir till nearly cold, and add 2 ounces of pulverized Camphor; stir well afterward. One of the best poultices in these cases, is made of a decoction of the Wild Indigo Root, thickened with a little Powdered Elm Bark. If tending to Gangrene or Mortification, sprinkle on freely of Powdered Charcoal, and add Yeast to the Poultice. To touch the edges of the Ulcer occasionally with a lotion of Oil Amber and Tinctures Blood Root and Cayenne, equal parts, is sometimes very good to make them heal.

Constitutional treatment should not be neglected. Bathe the surface frequently; keep the bowels in proper condition, with Laxative and Alterative Medicine, occasionally giving an active Cathartic. It may also be well, in Ulcers of long standing especially, to take something to purify the blood and the general system, such as a syrup or decoction of Burdock, Yellow Dock, Yellow Parilla, and Sassafras Roots, Elder Flowers, and Cherry-tree Bark. To each pint add one dram of Iodide of Potassa, and take a wine-glassful two or three times a day.

THE VARICOSE ULCER.

THIS class of Ulcers almost invariably occurs on the lower extremities, generally about the ankle and sides of the leg. There is always a varicose or swollen condition of the veins in the part, hence the name. In other respects, the Ulcers may be either irritable o indolent. They are usually very tender to the touch, and often very painful when the part is exercised. Nearly all the small veins in the vicinity are involved, and the bluish red color of the sore extends some distance around. The leg will often be greatly swollen or enlarged, mainly on account of the engorged state of the veins.

Treatment. — If the Ulcer be of the Irritable or Indolent character, treat it accordingly. The only peculiarity of treatment called for is for the engorged and enfeebled state of the veins in the part affected. For this use astringent and tonic washes, as a decoction of White Oak Bark, with some Alum dissolved in it; also Tinctures of Nutgall and Catechu. If the Ulcers appear to be indolent, use also Tinctures of Cayenne, Myrrh, and Oil Amber, as a wash. It will be well also to submit the limb, or the part affected, once or twice a day to a steaming over Bitter Herbs. This is very important, and will have an excellent effect.

In addition to the above, and what is perhaps of the greatest importance, apply what is called a Roller; that is, a compression or bandage, by means of a long strip of muslin, about two or three inches wide. Let it be long enough to wrap the foot and leg from the toes to the knee, or above the swelling. Begin at the toes, and wind round, drawing pretty tight, so as to compress as much as can be borne, and continue winding till you get above the swelling, allowing the edges of the roller or bandage to overlap each other a little. Remove it at least every morning and evening, to wash and dress the Ulcers, and, if need be, foment or steam over Bitter Herbs, and then apply again, each time drawing the roller a little tighter. This will reduce the swelling and the engorgement of the vessels, and in the course of a few days the Ulcers may be in a condition to commence healing. Occasionally it may be necessary to poultice; but at all other times continue the bandage, and heal with salve and the proper washes. If the edges of the sores are hard, and will not heal, scarify them, and apply Stimulants and Astringents, and occasionally a little Caustic.

It is very common to meet with cases of this kind, called "Old Sore Legs," originating from fever, or from drinking whisky, or from injuries to the part, which have been neglected. In all such cases, you can succeed in effecting a cure, if you will pursue the above course, rigidly, and for a sufficient length of time. Make use of the Bitter Herb Fomentations, the Astringent and Stimulating Washes, and the Roller Compress, and you will succeed.

The constitutional treatment should be more or less such as recommended in the other kinds of Ulcers.

GANGRENE AND MORTIFICATION.

MORTIFICATION is the decomposition or death of a part of the body, while the balance or surrounding parts are in a more or less healthy state. Gangrene is the first or incipient state of Mortification. Mortification may be the result or termination of inflammation, as of the bowels, or other part of the body; it also, and most commonly, results from Wounds, Injuries, Burns, and the like; also from Freezing, Compression so as to stop the circulation of the blood in a part, Dropsy, Scurvy, Ulcerations, and the like.

When Mortification takes place, the pain in the parts, though ever so great, ceases: the inflamed part assumes a darker color, perhaps of a bluish purple, and becomes cold, flaccid or soft; the circulation in it ceases; serum exudes through the skin, raising the cuticle into blisters; the part finally changes to a dirty brown or black color. If the Mortification is extensive, the patient becomes excessively thirsty, with dry tongue, and a cold sweat breaks out over the body; the pulse becomes quick and small, and sometimes irregular; the face flushed, with more or less irritative fever; great anxiety of countenance, prostration of strength, and perhaps Delirium, Hiccough and Death.

Treatment. — The first and principal thing to be done is to arrest the spread of the disease; while at the same time the patient's strength must be upheld, and Nature assisted in separating the mortified parts from the living, so as to prevent absorption of the poisonous matter into the system. If the Mortification is external, as of a wound, the most powerful Anti-septic Washes and Poultices must be applied. The part should be thoroughly bathed with Tincture of Myrrh and Pyroligneous Acid, equal parts, mixed, and a poultice applied composed of Elm Bark, Hop Yeast, and Powdered Charcoal. This is an excellent poultice for all cases of Gangrene and Mortification. It should be renewed often, bathing the part well each time with the above liquids. A decoction of the Wild Indigo is also a powerful Anti-septic, and is good to wash the part with, and also to make a poultice with Elm Bark, or with Corn-meal. Balsam of Peru may be added to the Tincture of Myrrh and Pyroligneous Acid. It is also recommended to sprinkle Sulphate of Zinc freely on the part previous to applying the poultice. As fast as the mortified flesh becomes loose, it should be removed, and the remedies applied again.

Internally, the patient, in order to support his strength, and also to counteract the Mortification, should take Port Wine and Peruvian Bark, or a little Quinine; also, a table-spoonful of Yeast and Charcoal should be taken occasionally.

The free use of Pyroligneous Acid to the part, and the poultice of pulverized Elm, Yeast, and Charcoal, will arrest almost any case of

Gangrene and Mortification, where it is possible to do so with any thing. It may be relied on in almost any emergency.

Where the danger of Mortification is internal, as from Inflammation of the Bowels, powerful Anti-septics must be taken internally; such as Castor or Sweet Oil and Spirits of Turpentine, in equal parts, or two parts of Oil to one of Turpentine, and taken in table-spoonful doses every hour or two for a while, till they operate on the bowels; then at longer intervals. Also, the patient should take Yeast and Charcoal freely; while the whole external surface of the abdomen should be bathed with Tincture of Myrrh or Number Six; and, if you can get it, the Pyroligneous Acid, and a large poultice of Yeast, Charcoal, and Elm applied, and renewed several times a day. Fomentations of Smart-weed should also be used; and the patient should occasionally take some of the decoction of this herb. Smart-weed is a powerful Anti-septic, and a strong decoction of it is good, applied to any case of Mortification, whether external or internal. But in all cases where Mortification of the Bowels has not actually taken place, you can rely upon the Oil and Turpentine, to be taken freely.

When the Mortification of a part has been checked, and the dead part is about to separate, a healthy circulation is again established, and a white or light red line, called the *line of demarcation*, appears along the edge of the living part, separating it from the dead. The mortified part then soon sloughs away, leaving a healthy granulating and suppurating surface, which is to be treated as any simple Ulcer, with Poultices and Healing Salves.

SPRAINS.

A SPRAIN, technically called *Subluxation* or Partial Dislocation, is an injury of a joint—most commonly that of the wrist or ankle. Though not really a dislocation, it is often more painful and troublesome, requiring longer time to recover from, than a dislocation or fracture. A Sprain is caused by a severe twist or straining of the joint in any direction farther than its natural range of motion, thus stretching and sometimes tearing or bruising the ligaments, and the surrounding soft parts, or muscles, and in bad cases, of the capsular ligament itself.

Treatment. — The first indication is to allay inflammation. If there is much swelling, frequent applications of Warm Water should be made, with Bandages, or the Hot Fomentation of Bitter Herbs. A warm poultice of Wheat Bran and Hops, with a little Vinegar, is very good. After thus reducing the inflammation and swelling somewhat, an excellent application is the leaves of Wormwood and Hops

simmered in vinegar, with say a table-spoonful of Salt to a pint of the liquid, and applied, warm or cold, by means of flannel bandages. Follow this treatment with the application of any good stimulating and relaxing liniment, such as the Rheumatic Liniment, Pond's Extract of Witch Hazel, or Arnica Liniment.

POLYPUS OF THE NOSE.

POLYPUS OF THE NOSE is a soft, excrescent or fungous growth, which forms in the nose, and, sometimes from its increased size, occasions a great deal of annoyance and inconvenience. There is a kind of Polypus, though rare, that is hard, tough, somewhat like gristle; but the ordinary Polypus of the Nose is soft, spongy, of a light red color, without sensibility, and is attached to the inside of the nose by a small root or pedicle. It sometimes becomes so large that it completely fills the side of the nose in which it is located, and even protrudes. Sometimes, instead of protruding from the nose anteriorly or in front, it passes back into the throat, greatly impeding deglutition or swallowing. The nose also often becomes swollen or enlarged, the sense of smelling partially or entirely lost, breathing through the nose obstructed, the hearing injured, and other unpleasant symptoms.

Treatment.—If taken in the early stages, when the growth is but small, Polypus may be easily cured, and with but little pain or inconvenience. Some physicians are for operating or removing it immediately by the use of some instrument, but it is seldom a successful mode of treatment, and never necessary, while the Polypus is small, or does not cause much inconvenience. For all ordinary cases, the following powders, used as a snuff, will be sufficient: Take equal parts of finely powdered Bayberry Bark and May Apple Root, and a double portion, or as much as both of these, of Blood Root; mix well, and snuff a little up the nose, on the side of the Polypus, several times a day. If it can not be sufficiently applied to the tumor by snuffing, it must be applied in some other way. The idea is, that this powder must be freely applied to the fungous growth in the nose; and if done so, it will eventually destroy it. It may be applied with a bit of rag wrapped on a probe of any kind, by wetting the rag and then dipping it into the powder. It will also be well to crush the Polypus, or such portions of it as can be reached, with a part of the small forceps; and if it is very large, portions of it should be twisted off with the forceps; then apply the powder. It will gradually kill the excrescence, turning it black, when it will slough off. It will take a good while to do it, however, and should therefore be continued perseveringly. Powdered Poke Root is good, and may be

added to the others, or used alone. Blood Root alone will kill it, but the combination of two or three of them will answer the purpose.

If it should be preferred to use a liquid preparation, and it is some times well to do this also, after using the powder for a few days, as a change, take the following: A saturated or strong Tincture of Blood Root (that made with good Vinegar is preferable), say 2 ounces; dissolve in this 2 drams of Sulphate of Zinc, when it is ready for use. Apply to the Tumor or Polypus several times a day, by introducing a bit of lint or cotton wet with it into the nose, so that it rests upon the Polypus, and let it remain there, plugging up the nose with cotton or some other suitable article, to keep it in its place. This preparation is very good, and may be used week about, in alternation with the powders I have named. After the Polypus has been destroyed or removed, if any soreness or ulceration remains, heal with some good Healing Salve, occasionally using the powder or liquid to destroy any remaining portions of the Polypus.

RUPTURE—HERNIA.

HERNIA, OR RUPTURE, exists where some portion of the cavity of the abdomen has become ruptured, from internal pressure, straining, or some other cause, so that a portion of the intestines or abdominal viscera protrudes, forming a tumor of greater or less size, inclosed beneath the skin in a sort of sack formed of a portion of the peritoneum or lining membrane of the abdomen, which is pushed out through the opening before the intestine.

Rupture most frequently occurs in one of the groins; though it may occur at the navel or umbilical region, or any part of the lower abdomen. When it occurs at the groin, it is called Inguinal Hernia; when at or near the navel, Umbilical Hernia; it is also called Femoral Hernia when it escapes through what is called the crural ring, and Scrotal Hernia (in the male) when it passes down into the scrotum, and Labial Hernia (in the female) when it passes into the labia. When it can easily be reduced, that is, returned into the abdomen, or when it produces no pain nor hindrance to the performance of the functions of the bowels, it is called Reducible Hernia; when, owing to its great bulk, and the contraction of the opening through which it passed, it can not be returned, it is called Irreducible or Incarcerated; and when in addition to this, the protruded parts become inflamed, constricted, and painful, and the operation of the bowels is obstructed, accompanied, as is generally the case, with nausea, vomiting, quick, hard pulse, and more or less fever, it is called Strangulated

Hernia. There are still other divisions, and subdivisions, but they are too technical and useless to be named here.

In some cases of Hernia, the intestine does not protrude, the part protruding being the omentum or caul fat; in others, it may be the intestine alone; or it may be both. The nature of the contents of the tumor may be known by the following facts: If it is the omentum only, the tumor will be soft, flabby, uneven, inelastic, and insensible, feeling to the touch like soft dough, is easily compressed, and receives no impulse from the patient's coughing, and when it is returned into the abdomen, it is not attended with any gurgling noise. While, if the tumor is formed of the intestine alone, it will be smooth, elastic to the touch, becomes tense by coughing, or by holding the breath, is more easily returned, and is generally attended with a sort of gurgling noise while descending into the abdominal cavity. Where it consists of both, it will have, to some extent, the characteristics of both, but in a less distinct manner than either of the others. A part of the tumor will be elastic and sensitive; while the balance, the omentum part, will present the peculiar soft, doughy and insensible condition.

Hernia may be the result of general debility, or unusual largeness and relaxation of the natural openings of the abdomen; or of costiveness and severe straining at stool, violent bodily exercise, hard lifting and straining, rough riding on horseback, severe coughing; also of blows, wounds, falls, and the like; it is also sometimes induced by pregnancy. When it results from bodily exertion, as straining, lifting, injuries, and the like, it generally appears suddenly, and is more apt to become strangulated and dangerous; while, when it occurs in consequence of general debility, relaxation of the parts, or a natural predisposition, its formation is more gradual, and in general it may be easily reduced.

Treatment.— The first object to be accomplished in Hernia or Rupture, is to replace the protruded parts into their natural cavity; and the second is to have them retained there. In recent cases, especially of the milder form, or that termed Reducible Hernia, there is generally but little difficulty in accomplishing the first; indeed the patient can often do it himself. Some cases of Hernia seem to give but little trouble and inconvenience, and for that reason are apt to be neglected; this, however, should never be done, for there is no telling how soon the case may become serious, if allowed to continue. In recent cases, where there is no inflammation, the reduction, or returning of the parts, may generally be accomplished without difficulty. The best position for the patient to assume is the recumbent, or rather upon the sound side, with the hips somewhat elevated, and the thighs brought up toward the abdomen, so as to relax the muscles and parts about the Rupture. Then, either the patient himself, or

the assistant, is to make use of manual effort, with the hands and fingers (which effort is medically called the Taxis), by gently and moderately raising the tumor with one hand, and compressing it, while with the forefinger of the other hand he presses the protruded parts moderately and by degrees up and into the abdominal cavity, holding the returned part there, while with the next finger another portion is gently pushed in; and so alternating with the two fingers, until all has been returned. In external Inguinal Hernia, the pressure is to be made upward and outward, that is, toward the upper point of the hip-bone of the same side; in Femoral Hernia, it is to be made downward and backward; while in Umbilical Hernia, the pressure is to be made directly backward. All violence must be avoided, and great care and tenderness used in handling the parts, so as not to cause pain or injury.

After the reduction has been accomplished, the parts are to be maintained in their place; and this is best done by means of a suitable instrument, called a truss. Hernia is strictly a surgical disease, and one which, unless of a very trifling character, should always be submitted to the direction and care of a physician. If the case is of a slight character, such as can easily be reduced by the patient himself, he may go to a drug store or surgical instrument-maker's shop, and procure a suitable truss; then, after reducing the hernial protrusion, as above directed, apply the truss, and wear it as directed either by his physician or by the person of whom he obtains it. But if it is of too serious or difficult a character for the patient to manage himself, a skillful physician should attend to the reduction of the Hernial Tumor, and also should direct the use of the truss.

When the Hernia is of the strangulated kind, that is, inflamed, enlarged, causing a derangement of the functions of the bowels, and giving rise to a train of unpleasant or serious symptoms, such as usually attend in such cases, it will be absolutely necessary to employ a physician or skillful operator at once. In case of inflammation, Poultices must be applied to the tumor, and when there is constriction of the Hernial opening, as is generally the case in Strangulated Hernia, relaxing medicines and applications must be employed. The bowels, too, must be evacuated, by equal parts of Castor and Sweet Oils, with two or three drops of Croton Oil to each dose. Give a table-spoonful of each of the first two, at a dose, with two or three drops of the Croton, and repeat every two hours, till they operate—aiding their action with laxative injections, such as melted Lard, Sweet Oil, and five or six drops of Croton Oil. The poultices should be composed of Elm Bark, with powdered Lobelia plentifully sprinkled on them, applied warm and renewed often. The tumor may also be anointed each time, before applying the poultice, with Stramonium Ointment, in which a few drops of Croton Oil have been mixed. Sometimes, by pursuing this course, and applying a poultice of this kind and letting it remain on all night, the patient lying on his back, or in a proper position with his hips slightly elevated, the tumor will be found nearly or quite reduced in the morning. Some physicians are disposed to operate with the knife, in such cases, as

the only resort; but operations for Hernia are seldom successful, and always dangerous, and need never be resorted to, if the above course is thoroughly and persistently carried out.

After the inflammation has been subdued, and the restriction of the parts overcome sufficiently, reduction of the tumor or protruding parts is to be undertaken and effected in the manner already described, or as the attending physician or surgeon may think best; after which, a suitable truss, or other application, is to be applied, and the patient is to remain as quiet as possible until the danger is past. But remember, in all serious cases of Hernia, submit the matter at once and without delay to a skillful physician. There are some cases where, on account of the largeness of the Hernial opening, or other causes, the rupture can never be overcome or remedied so that the tumor can be reduced and made to remain in the abdominal cavity — not even by wearing a truss or bandage. When this is the case, a proper suspension sack should be properly adjusted and worn, in which to rest the tumor, and this should also be done under the direction of a physician.

SHORT TREATISES.

GANGLION,

SOMETIMES called Weeping Sinew, is the surgical name given to a peculiar, small, encysted tumor, which sometimes forms in the fasciæ, near the tendons or sinews — usually on the wrists, backs of the hands and tops of the feet. It is not a very common affection. The tumor contains a fluid, like the white of eggs, or more commonly like milk or cream. It generally occurs near joints.

The probable cause of these tumors is some mechanical injury to the part, which occasions a slight rupture in the fasciæ, or sheath of the muscle, or of the membrane covering the joint, in which case the secretion called the synovial fluid escapes, and occasions the formation of a sac, or cyst, in which the fluid is contained, thus forming the Tumor or Ganglion.

If the Ganglion is allowed to follow its own course, an opening is apt to be formed eventually, from which a sanious fluid, that is, a fluid mixed more or less with blood, exudes, which may terminate in a malignant ulcer.

Treatment. — The treatment in such cases should be that which

is calculated to promote absorption of the fluid, and adhesion of the surrounding tissues. To do this two things are necessary; 1st. A strong stimulant application, such as Stimulating Liniments; 2nd. Firm compression, by means of Bandages.

If this fails, or is not sufficient, the part should be scarified and cupped, and an Irritating Plaster then applied, and thus produce suppuration and a sort of running sore. Keep up for a week or two, and then heal with the Black Salve. The Compression, or Bandages, should all the while be applied, and occasionally some Stimulating Liniment, or a little Tincture of Cayenne and Myrrh. If such treatment as this fails (which will be very seldom), you must apply to a good surgeon, and let him remove it.

FOREIGN BODIES IN THE EYE.

TREATMENT. — When small substances get into the eye, or under the lids (and none but small substances are apt to do so), they can generally and readily be removed by the proper use of the eye-lashes. For instance, if it gets under the upper lid, which is usually the case, take hold of the lashes of the upper lid, draw it up as far as you can, then shut the eye and pull down the upper lid over the under lid, hold it there and work it about with the fingers for a few moments, and then with the eye-lids, and, with a clean, soft handkerchief, or something of the sort, wipe downward over the lashes of the lower lid. The idea is that the lashes of the lower lid will bring out the substance, whatever it may be, and the handkerchief will remove it from the lashes. If one trial does not answer, continue the operation; it will generally succeed; so, too, if the substance should be under the lower lid, use the upper in the same way to remove it. If it can not be done in this way, then the next best plan is to use a small feather — the wing-feather of a bird or pigeon. Get some person to raise the lid a little, and, with the other hand, sweep round over the eye-ball and under the lid with the feather, and in that way brush it out. Any skillful person can, in this way, readily remove any substance that may get into the eye. A camel's-hair pencil brush may be used instead of the feather.

If hard, sharp substances get in under the lid, and stick fast in the eye, or the lid, then it is more difficult to remove, and it may be necessary to call in a physician or surgeon to perform the operation.

If inflammation arises, as will often be the case, apply Cold Water, and folds of muslin wet with Cold Water, and, if necessary, poultices of Elm Bark, to reduce it. The eye is a very delicate thing, and must be tenderly dealt with. A very small substance will soon start severe irritation and inflammation. Whenever you find that you can not readily extract a substance from under the lid, you should, without delay, apply to a skillful physician.

Sometimes very great pain in the eye is caused by *lime* dust; in such cases deluge the eye by the use of Vinegar or Lemon-juice and Water, using a tea-spoonful of either to a tea-cupful of water.

FOREIGN BODIES IN THE EAR.

TREATMENT.—It is better, where it can be done, to remove foreign substances from the ear with the use of a small syringe than with forceps. If an insect gets into the ear, deluge it with Sweet Oil—with a syringe, if you can get it; if not, pour in the Oil anyhow. If you have not the Sweet Oil, use Lard Oil, or melted Lard, or Turkey or Goose Oil. A light placed opposite the ear may tempt an insect to retreat from it.

If a solid substance gets into the ear, and you have no suitable forceps, and cannot extract it readily, call in a physician or surgeon immediately, before injury is done by rough attempts.

FOREIGN BODIES IN THE THROAT—CHOKING.

A SUBSTANCE lodged in the throat generally stops at the narrowest part of that passage, which is just at the upper edge of what is called the cricoid cartilage—that round, hard ring of the throat, called sometimes Adam's apple. But it is not likely to remain there long, as the efforts of the subject, or others assisting him, will be apt to push it down further. The lodgment of a substance in the throat, or Choking, may be a very serious affair. If the substance remains long, and the patient can not swallow, life at once becomes endangered. Inflammation also will soon set in, followed by suppuration and ulceration. Or if the substance be very large, it may so press upon the Trachea, or wind-pipe, as to prevent breathing.

Treatment.—The indication in the treatment of a case of Choking is to remove the substance—first, by extracting it if possible. If this can not readily be done, and it is something that may properly pass into the stomach; that is something that is digestible and not injurious, then endeavor to push it down into the stomach.

Children are very apt to "choke" while eating, in endeavoring to swallow a substance too large for them. In such cases, a very common and generally successful mode of treatment is to strike the patient immediately several severe blows with the hand *on the back*. Almost all mothers know how to do this. If, however, you find it impossible by ordinary means to remove it, then seat the patient, throw his head back, and open the mouth as wide as possible; then pass your finger down his throat, regardless of his gagging, or efforts to vomit, that is all the better; search with the finger for the substance, and, if possible, *bring it up*. If the substance can be seen, and you have a pair of small forceps of the right size, use them. If, however, the substance has passed too low to be reached in this way, and the patient can swallow, give a Lobelia Emetic, if you have it, or a quantity of Tincture of Lobelia. Give it freely, to produce both vomiting and relaxation of the parts. And if he can not swallow, the holding of a quantity of Lobelia Tincture in the mouth and throat

awhile will itself often excite vomiting. If this does not produce vomiting, give the Lobelia freely by injection or enema, and have it retained. That will produce vomiting. If all these means fail, then *push it down.* Take a piece of whale-bone, or something similar; cover the ends and sides with two or three thicknesses of silk, and wrap it with some thread to keep it attached, and with this endeavor to push the substance down into the stomach. If the instrument passes by the substance — being too small — then make it larger, by covering the end with a sufficiency of silk or muslin, firmly attached, and try again, lubricating it with Sweet Oil, or any kind of grease In the mean time, *send for a physician.*

FOREIGN BODIES IN THE NOSE.

FOREIGN substances are not apt to get into the nostrils unless purposely introduced. Such cases sometimes occur in children, by their introducing something, as the stone of a cherry, a grain of corn or wheat, and the like, into the nose or nostril, until it gets beyond their reach, and remains. Such cases are apt to produce alarm, and are sometimes dangerous. Small children should always be guarded, and prevented from having any small substance which they might thus thoughtlessly introduce into the nose; and larger children should always be properly instructed on the subject. The greatest difficulty in removing a substance from the nostril, that has been introduced there, will often be in not having the proper kind of an instrument for the purpose. If you always had that, you could generally do it, without the necessity of calling a physician. And yet a person ought to know something about the shape of the cavity and internal formation of the nose, in order to be successful, or perform the operation without causing great pain, and perhaps injury to the parts.

Treatment.—A small ear-scoop or round end of a hairpin will often answer the purpose. Or an instrument may be made of some tough, flexible wood, as hickory, that will not break, that may answer. This, together with a small pair of forceps, if they can be procured, will generally be all that is necessary. The substance must be sought for, found, and, in the best manner possible, removed or brought out. It will be well in the first place, however, to endeavor to cause the patient to *sneeze* as severely as possible. Tickle the nostrils, or introduce into either or both a little Tobacco Snuff.

FOREIGN BODIES IN THE WINDPIPE.

TREATMENT.—To remove a foreign substance from the windpipe is an operation—if it has to be done by an operation—which should never be undertaken or thought of by any one but a skillful physician or operating surgeon. If the patient cannot throw it up

by forcible exhalation, or expulsion of the breath, it will be necessary, most likely, to have the operation of Tracheotomy performed -- which is to make an opening from the outside into the trachea or windpipe, and remove the substance in that way. For this purpose, call in at once the most skillful physician or surgeon you can find. The operation is not at all difficult nor dangerous, when done by one who knows how.

CORNS.

ALL who have been so unwise as to wear tight boots or shoes, have a painful appreciation of the sort of thing a Corn is. They are too well known to need any description here.

Treatment.— Take of Nitric and Muriatic Acid, each, ½ ounce; pulverized Blue Vitriol, ½ ounce; put the three together in a glass bottle; then add Molasses and Rain Water, each, 1 ounce; and, last of all, add of Pearlash, ½ ounce. Add the Pearlash slowly, and after it is done foaming, cork for use. Pare off the Corn to the quick, apply a little of this liquid with a feather, and bind up with a bit of tallowed rag. Repeat the application once a day, for a few days. Generally two or three applications are sufficient to effect a cure. In the mean time, loose, easy shoes should be worn.

Another plan: Take of Nitric and Muriatic Acid, each, 1 dram; mix, and apply of this to the Corn, by touching it with the vial-cork; then take a sharp-pointed penknife or lancet, and carefully lift out the Corn, by first severing it around the edges; then apply a little plaster of any kind of healing salve. Arnica Plaster is very good; so is a plaster of Putty.

The bark of the common Willow, burnt to ashes, mixed with strong Vinegar, and applied to the parts, will remove Corns and similar excrescences.

BUNIONS.

A BUNION is simply a Corn on the big toe; or more technically speaking, it is an enlargement and irritation of what is called in Anatomy the *Bursa Mucosa* of the great toe. The cause is usually the same as that of common Corns, and it should be treated the same.

Treatment.— The best prescription that can be given for Bunion or any other kind of Corns, is to go "loose shod," or cut a hole in the shoe over the place where the Bunion is. If the parts around the Bunion are inflamed, soak the part in Warm Water for half an hour or so, at night, and then apply some Emollient Poultice. A poultice of Slippery Elm Bark, or of Flax-seed, is very good. In other respects treat the same as a Common Corn.

CALLUS.

CALLUS, in surgery, means a preternatural or unnatural hardness and thickening of some part—especially of the skin. It is really but a species of Corn, being caused by pressure and rubbing by some object with which it is brought into contact, as the shoe. The remedy is *to remove the cause*, and avoid it in future.

Treatment. — A case of Callus should be treated the same as a Bunion. Pare off the hardened skin with a sharp knife, where you can; soak the part in Warm Water, to soften it, and then apply an Emollient Poultice, or some softening Oil or Ointment, and continue to do so until you have overcome the difficulty; in the mean time, remove or avoid the cause of friction or rubbing, which produced it in the first place. Or treat it like an ordinary Corn, by applying the Aqua Regia, or equal parts of Nitric and Muriatic Acids, touching the Corn or part with a little of it a few times, and then apply some good Salve, as the Black or All-Healing Salve.

WARTS

USUALLY appear on the hands, and need no description.

Treatment. — To remove Warts, take equal parts of Muriate of Ammonia, Cayenne, and Blood Root, all finely pulverized; mix and form into a plaster with a little Beeswax and Tallow, melted together. Bind a plaster of this on the Wart, protecting the surrounding surface by first applying a bit of Adhesive Plaster, with an opening or hole cut in it just large enough to admit the Wart through it; over this and on the Wart, put the other plaster. It will be well to cut or pick the Wart a little, and touch it occasionally with Lunar Caustic, or a drop of Nitric Acid. Renew the plaster once a day, till the Wart is removed or killed, then heal with some good healing salve.

Take Carbonate of Soda, 1 ounce; Water, 1 pint; dissolve, and wash the Warts, and parts where they are located, with this solution, three times a day. Said to be a specific.

FELON, OR WHITLOW.

A FELON is often an exceedingly painful and troublesome inflammation of the thumb, fingers or hand, and sometimes of the toes, and almost always suppurates. At first, a slight swelling is seen, accompanied with a deep throbbing and pricking sensation, frequently acquiring great intensity and affecting seriously the sinews and bones, resulting, perhaps, in a stiff joint, produced by the contraction of the former, and possibly a loss of a portion of the bones near the ulceration which has occurred.

Treatment. — Soak the finger, or part affected, in strong Lye, as

hot as can be borne, for half an hour at a time, two or three times a day, and apply a plaster of Salt, Soap, and Spirits of Turpentine. This will "scatter" it if used in time. If it comes to a head, lance it, poultice with Lye and Elm Bark, and heal with some good salve, or bathe the part affected in hot Ashes and Water. Apply the Yelk of an Egg, 10 drops of the Spirits of Turpentine, a small quantity of hard Soap, and 1 tea-spoonful of burnt Salt, and 1 of Indian Meal. It never fails to effect a cure if applied in season.

Take a little Venice Turpentine, thicken with Wheat Flour, and apply a thin plaster; or apply a plaster made of Soap and brown Sugar, equal parts; or a plaster of Shoemaker's Wax, which is very good; or a plaster of Honey and Wheat Flour, also very good.

Fresh Poke Root, roasted in hot Ashes until soft, and mashed into a poultice, is an excellent application for Felons.

It will be proper also to give a good purge.

BURNS AND SCALDS.

WHEN one has been severely burned or scalded all clothing that is in the way must be removed by the quickest and readiest mode—clipping, if necessary. Puncture one edge of all blisters, that the contents may escape and the elevated surface of skin may fall to its lower level, and then apply (well soaked in the purest Sweet or Castor Oil) strips of soft linen—old white handkerchiefs are the thing—and leave them without changing as long as seems best.

In slight burns use cold water freely; a finger, hand, arm, or leg, if thus injured, can be kept in water for hours with advantage—indeed the whole body, when extensively burned, may be immersed in water heated to blood heat, 100°, and, when taken out, enveloped in linen rags, well soaked in a mixture, half each of Linseed Oil and Lime Water. Give the sufferer some stimulant, and also an anodyne, as may seem necessary to sustain him.

When clothes are on fire smother out *quickly* with some woollen covering.

HOT WATER AS A REMEDY.

THE London *Lancet* contains an exhaustive article on the "Therapeutical Drinking of Hot Water; Its Origin and its Use." The article is written by Dr. Ephraim Cutter, an eminent physician of New York City, and contains statements and suggestions which are certainly worthy of attention. Dr. Cutter says the use of hot water in this way is an American idea, and he gives directions for its proper use. In the first place, it must be hot, *i. e.*, not less than 110° nor more than 150° Fahrenheit. This excites proper action of the digestive organs. Cold water depresses and lukewarm water causes vomiting. For diarrhœa the hotter the water the better. For hemorrhages it should be at blood heat. The quantity of hot water drunk varies from one-half pint to a pint and one-half, according to the condition of the patient and the disease treated. The hot water should be taken from one-half to two hours before each meal, and half an hour before retiring. This gives the water time to operate. The water should be sipped slowly, half a pint half an hour. Drink half a pint to a pint at morning on rising, for constipation.

EIGHTH DIVISION.

MISCELLANEOUS TREATISES.

THE CHEST AND LUNGS.

WITHOUT good air, and enough of it, of course, disease follows, and Consumption very frequently is the consequence. Surely there can not be enough of good air in lungs that are stayed and pent up in a small, malformed chest. The great preventive of Consumption is to be found in a large chest, with free breathing. Sitting, or standing in a stooping posture, contracts the muscles of the chest and makes it small. This is a subject of interest to all, especially among a people working in doors, over tables and benches. Those in easy circumstances, or who pursue sedentary employments, generally use their lungs but very little — breathe very little air into the chest, and thus, independently of bad positions, contract a wretchedly narrow, small chest, and lay the foundation for the loss of health and beauty. All this can be easily obviated by paying a little attention to the manner of breathing. Recollect, that the lungs are like a bladder in their structure, and can be stretched to double their ordinary size with perfect safety, giving a noble chest, and comparative immunity from Consumption. All the agent required, is the common air we breathe. No obstacles should exist external to the chest, such as tight lacing, or tying it around with stays, or tight dresses, or holding the shoulders in a stooping position. On arising from the bed in the morning, you should place yourself in an erect position, your chest thrown back, and shoulders entirely off the chest. Now inhale, or suck in, all the air you can, so as to fill the chest to the bottom of it, so that no more air can be inhaled. Now hold your breath and throw your arms off behind, holding in your breath as long as you can; again inflate your chest and walk about, holding in your breath as long as possible. Repeat these long breaths as many times as you please. If done in a cold room, it is much better, because the air is heavier and denser, and will act much more powerfully in expanding the chest: always, when expanding the chest with air, throw the

head back so as to elevate the breast-bone, and bend the whole bust backward from the waist. You may, in this manner, expand the chest a thousand times a day, if you please. On going out of doors into the cold air, inhale all the air you can, and hold it as long as possible. Stand or sit perfectly erect, while walking or riding through the street, along the road, in fields or gardens, and practice this mode of expanding the chest. Do not stoop forward at all, but inhale all the air you can, throwing the head and neck forward, and hold in the air as long as possible. By this exercise you will often check a cough, or a disposition to cough. The chest may also be fully expanded while lying in bed. Exercising it in this manner, will soon make it very flexible, and very expansible, and will enlarge its capacity and the size of the lungs, so as to hold, in a few weeks, double their former quantity of air, while around your chest you will measure from one to six inches larger. Should you not have full strength to enlarge the chest in this way, then use an inhaling tube. The inhaling tube will greatly assist you in expanding the chest, whether you are weak or not. The chest should be treated in this way during your whole lives. Should you become invalids from any cause, keep your chest expanded by long breaths, and the inhaling tube, and continue to breathe a little cold fresh air daily, by having it drawn from out of doors, by leather or tin pipes, or in any other manner you please. While forming a fine chest, and after it is formed, great care is requisite to establish perfectly correct positions, so that the chest shall not be contracted, and all of your efforts counteracted by bad positions. If your positions are habitually bad, in spite of all you can otherwise do, the chest will be more or less contracted. The rule with you should be, and the rule of health is, to keep the bottom of the chest, the ends of the short ribs, and the lower extremity of the breast-bone, as far out from the backbone as possible. To effect this, the chest must be perfectly straight and thrown a little backward from the waist at all times. The small of the back is made flexible, but the hip joints are the points at which to stoop, either backward or forward. The joints are ball and socket joints, like a swivel in some degree. The trunk of the body may bend forward as much as you please for all useful purposes, and the chest, the whole spine and neck, be kept perfectly straight. Hence, no lady should ever make a table of her lap, either for sewing, reading, writing, or any occupation whatever. Let these, and all the works you do, be arranged upon a table before you, and that table be raised to the arm-pits, or as high as possible, so as to keep the chest straight. A little practice will make this infinitely more agreeable than to stoop; while little or no fatigue will be experienced at your occupation, compared to what is

experienced while stooping, or from habitual stooping. The weight of the shoulders will thus be kept off the chest, which is one of the grand causes of fatigue from manual labor. You will entirely prevent the mark of servitude being impressed upon your person in a pair of round, stooping shoulders, and flat, contracted chest, and thus avoid Consumption; for thousands of persons have brought this disease upon themselves, by neglecting to attend to these important directions, and particularly those who were predisposed to this disease from delicate constitutions, or hereditary causes; for this disease, like Scrofula, *runs in families.*

TIGHT LACING AND ITS RESULTS.

THE most mistaken and pernicious practice in the world is Tight Lacing; it distorts the "the human form divine," and causes destructive organic diseases which never can be remedied, thus curtailing life and disfiguring beauty. All the statues and paintings the Romans and Greeks have left us of Venus, the ideal model of female perfection of figure, represents her with a full, round waist, as Nature makes the most finished workmanship of her hands.

We hope this barbarous custom of murdering the fair proportions of the body will soon be heard of no more. We are certain it is getting much into disuse. There may be cases in which Lacing is required to brace the enfeebled chest and limbs, but never to the degree of the fashionable system of compressing the body into an hour glass, practiced by some young ladies, under the mistaken notion that they render themselves more beautiful, or that they may hear the marvelous exclamation, uttered by some would-be exquisite or fool, that he can span round her waist. I hesitate not to say, that of females, not one in fifty, I fear not one in five hundred, dresses sufficiently loose to suffer no ill consequences from ligature or compression.

Supposing our ladies had always been in the habit of dressing loosely, what would they say if they were compelled to lace themselves up, after the present fashion, as a punishment, and suppose that I should say, by this Tight Lacing you commit suicide? I should but speak the truth, and will show you how you accomplish it. You take several strong cords, fasten them round the waist as tight as you can bear it, and let them remain a day or two; gradually tightening the cords, until your body has the appearance of an hour glass. Your health will gradually decline, you will feel faint and

languid, can not endure work, and will have the Dyspepsia, Liver Complaint, and be exceedingly troubled with nervousness. No matter, the work of death will be gradually going on, and before many months or years, Consumption will be seated, and you will die so easy a death that your parting breath will hardly be perceptible. And I have no doubt that thousands have tried this method of successfully destroying themselves in this fashionable age.

In one of the annual reports of the Registrar General, on births and deaths, the following passage occurs: "In the year 1839, thirty-one thousand and ninety English women died of Consumption. This high mortality is ascribed partly to the in-door life they lead, partly to the compression, preventing the free expansion of the chest, by costume or dress." By this report, which is not inclusive of Scotland and Ireland, it would appear that perhaps not fewer than fifteen thousand lives are annually sacrificed through the agency of one distinct error in costume — Tight Lacing.

In the United States, this folly of Fashion is carried by females to as great a hight as it is in the United Kingdom; and this, we presume, will add a few more thousands of lives to the general sacrifice. There is no species of voluntary distortion that is productive of such disastrous consequences, in the loss of health and life, as is caused by this monstrous practice. The compression of the head among the Indians, is not usually injurious to health, however much it may add to hideousness of appearance. The compression of the female feet in China, though causing fretfulness in infancy, is not said to impare the constitutional energy. It has been left for English women to discover and introduce a practice the most deadly of all the means of personal discomfort and distortion.

The object of Tight Lacing is the same as that given for compressing the Chinese female's foot — an idea of securing beauty in form. A small waist is thought beautiful, elegant, and the perfection of figure. This idea originates in no correct perception of beauty, and is in violation of Nature. It has its foundation in caprice and ignorance. In all probability it began with some fashionable lady of the court, whose waist was admired for its handsome shape; and to have waists equally neat, all the other ladies would commence Lacing and squeezing themselves, without any regard to proportion or bulk of figure. Be this as it may, Tight Lacing has been followed as a fashion by all classes of females from the highest to the lowest; and now it may be spoken of as a universal frenzy, ruinous to comfort and destructive to health. How it should be injurious, may be understood from the following explanations: The interior of the body consists of two cavities, one above the other. In the upper

most, termed the chest, are contained the heart and lungs. The use of the heart is to act as a force pump for sending the blood through the various channels of the body. The lungs are the organs of breathing, and contain a vast number of minute cells and tubes, into which the air is drawn at every breath. The cavity of the chest is separated from the cavity beneath by a broad muscle, called the diaphragm. In the lower cavity is the stomach and the intestines; these constituting the alimentary organs, or organs for receiving and digesting the food. Immediately over the stomach is the liver, the duty of which is to secrete the bile. Within this cavity there are some other vital organs. The whole of this beautiful apparatus for circulating the blood, inhaling and expelling air, receiving and digesting food, and otherwise keeping the animal economy in motion, may be observed to be neatly packed together, laving no space unoccupied or to spare. Neither, however, is there any undue compression from without. We can see, at a glance, that pressure must have the effect of forcing the organs out of their proper place, and of crushing them on each other. This crushing, of course, prevents freedom of action, the heart's action is obstructed, the lungs can not freely breathe, the blood does not circulate healthily, the stomach can not well digest, while the liver and other viscera, or organs, are put out of sorts and all of their functions deranged.

The internal parts of the body thus briefly referred to, are, as every one must know, sustained by a frame work of bones, composed of the vertebra or backbone, the shoulder and breast-bones, and the ribs. External compressure, in the first place, discomposes and distorts this whole system of bones, and the frame, from its natural state; the ribs increase in the bulge or expansion from the higher to the lower, affording no room for the heart and lungs in the chest, and no space beneath for the liver, stomach, and bowels. By lacing the waist tightly, the lower ribs are forced in upon the liver and stomach; and these members, to escape the torture imposed on them, press partly down upon the bowels, and partly up against the diaphragm, (or broad thin muscle, which separates the chest from the abdomen) which, in turn, presses against the heart and lungs. Although the Lacing must be relaxed at night, the repeated daily pressure gives a permanent set to the bones, until the ribs are found unchangeably distorted, tapering toward a point where they should bulge out, and bulging out where they should taper.

This alteration of shape in the ribs, is the earliest and least distortion. Other and greater calamities to the bony structure ensue. Jammed out of their natural position, the heart and lungs press upon, and make an effort to expand, or widen, the chest and shoulder bones.

This effort is partly restrained by the external pressure, and there are thus two pressures contending against each other. Nature outraged has her revenge. One shoulder becomes higher than the other, and the spine is bent. Distortion is also going on beneath; very frequently one hip becomes larger than the other; the whole body is twisted. The usual mode of attack in this species of disease, (Spina Curvature,) is as follows: After long-continued pressure upon the chest and abdomen, occasioned by Tight Lacing, the health of the individual perceptibly declines with a rapidity depending upon the previous state of the constitution. This derangement of health produces a softening of the bones, accompanied often by a derangement of the functions of the lungs, in which the heart and organs of the abdomen participate. Unless arrested in its progress, deformity will follow, producing a scene which terminates in much suffering and calamity, and, often through neglect, in premature dissolution. A very little reflection will show the reader the mode in which curvature to either side is produced. The upper part of the stays or corsets is brought close under the arms, and being tightly girt behind, they cause great pressure on the scapulæ, or shoulder blades; these, in their turn, press upon the ribs and spinal column, and by this pressure the free use of the arms is obstructed. The various avocations of life tend to a much greater use of the right hand and arm than of the left, by which means the former are enabled to move more freely from the unnatural restraint in which they are held, whilst the latter continue comparatively motionless. This is the cause of this elevation of the right, and consequent depression of the left shoulder, so common among females in the middle and higher classes of society. The disproportion in the size of the shoulders, which is so evident, is not caused by any material enlargement of the right shoulder, in which little or no difference takes place; the disparity arises from the diminution in size of the left, occasioned by the injurious pressure and confinement to which it has been subject. This more frequent use of the right hand and arm, which custom has rendered almost universal, combined with the injurious pressure, is productive of the general prevalence of deformities to either side of young females, especially when of delicate constitutions. By the general use of one arm and side, as already stated, and the feeble resistance offered by the other, to the confinement of stays, the left scapulæ, or shoulder blade, is forced against the ribs, and these, in turn, against the spinal column, which is thus pushed toward the right side; and in severe and long continued cases, some of the vertebræ, or bones of the spinal column, usually a part of the dorsal or backbones, are so far displaced as to be driven under the heads of

the ribs on the right side, which, being bent at an acute, or less than a right angle, form a ridge, that, upon slight view, may easily be mistaken for the prominence of the true spine, more or less curved — the convex side being toward the right shoulder. In such instances, the upper dorsal, or backbone, gives way so completely as to become almost horizontal; the hips also appear exceedingly disproportioned in size, the left one being much more prominent than the right. Distortions of the ribs, shoulder and chest bones, the hip bones and spine, are the common results of long continued Tight Lacing. As these distortions are not usually very conspicuous, some may doubt their existence; but the cause of their being generally concealed from observation is the mode of fashionable dressing, in which, by means of padding, the balance of the figure is externally preserved.

Other bodily deformities, or at least unpleasant appearances, arise from Tight Lacing. Among these is the displacement of the breast, the shrinking and hardening of the nipples, and the swelling and flushing of the neck. Sometimes this reddening appearance reaches the countenance, and imparts an unwelcomely glowing tinge to the point of the nose. Thick legs and swollen feet, are also common results of this practice. The internal disorders caused by this pernicious custom are too numerous to mention here. From a list presented from different medical writers by Mr. Coulson, in his popular work on the *Deformities of the Spine*, we select the following complaints and diseases, all caused by Tight Lacing. Headache, Giddiness, Pains in the Eyes, Ear-ache, Apoplexy, Bleeding at the Nose, Inability to Suckle, Scirrhus and Cancer in the Breast, Adhesion of the Lungs to the Diaphragm, Asthma, Spitting of Blood, Palpitation of the Heart, Water in the Chest, Cough, Abscesses in the Lungs, Consumption, Loss of Appetite, Squeamishness, Flatulence, or Wind, Rupture, Sickness, Bad Digestion, Fistula, Jaundice, Calculi, Diseases of the Kidneys, Hysteria, and Eruptions. To these consequences are added, in respect to mothers, unhealthy, ugly children, and monstrosities, besides some other horrors, for which we refer to Mr. Coulson's *Summary*.

The more common and obvious complaint of young females, subject to Tight Lacing, is derangement of appetite. The digestive organs are deprived of the due space required for the performance of their functions, the appetite for the food fails, or becomes depressed, and occasional faintness ensues. A sickly fainting feeling is also caused by the loosening of the corsets at night. As soon as the thorax or chest and the abdomen are relaxed by loss of their usual support, the blood rushes downward in consequence of less resistance to its motion,

empties the vessels of the head, and thus causes diseases of the womb, and feelings of sickness, faintness, and general weakness, accompanied with lowness of spirits, which tend, in a great degree, to affect the mind. To restore and sustain Nature, the young victim of Fashion frequently has recourse to artificial stimulants to allay the unnatural craving of the stomach, and throw her into an agreeable fit of good spirits. In many instances, Cologne, and other distilled waters, are used as stimulants, instead of more stimulating materials, and habits of tippling may thus be added to the list of evils, individual and social, arising from Tight Lacing. Of the unfortunate young females, who too often fall victims to this vicious practice, the blame ought, in some cases, to fall on mothers, who are, in many instances, the guilty cause of this fault. Much anxiety exists in families about the marrying of daughters. There is a constant dread among mothers that their daughters will not get a good match, or rich husbands, and to secure this important object, they oblige them to submit to a variety of tortures, considered essential by that most senseless of all things—*Fashion*. From some poor notion, that Nature is unable to impart that degree of straightness in the person and ease in walking, which are consistent with gracefulness, the mother begins strapping up her daughter's shoulders, and binding her body with a harness of corsets or leather belts. All this must be charitably considered to arise from ignorance. Nature has given but one law for strengthening the muscular system, and that is contained in three words — *Air*, *Exercise*, and *Diet*. To impart grace in walking, cheerful sports and recreations are chiefly desirable.* No man walks so gracefully or is so erect as the North American Indian, who roams free as the antelope from childhood. The error in civilized society, consists in first depriving Nature of the exercise she demands, and then attempting to remedy the want by artificial means.

OF THE TONGUE AND MUCOUS MEMBRANE.

General Characters of the Surface.—The character of the tongue undoubtedly is very much influenced by the state of the stomach. The mucous membrane which lines every part of the alimentary canal is continuous with that which lines the mouth and covers the tongue. Whenever there is a little gastric disturbance the tongue usually participates in the change. The relation between the two phenomena is, however, a complex one, and not very easily explained. Of the fact, in very many cases, there is no doubt, as many may easily prove by observations upon themselves.

* An admirable series of exercises in Gymnastics will be found delineated in the chapter on "Physical Culture," etc., contained in this work.

The appearance of the tongue is in some measure affected by the state of the circulation, by the character of the blood itself, as well as by the rate at which the epithelium (επι, upon, and τιθημι, to place) on its surface, grows to maturity, decays and falls off. Sometimes the epithelial cells remain intimately adherent to the tissue beneath upon which they are placed, and from which they seem to grow. The epithelium, or rather a layer of it, is frequently very easily detached, but sometimes it adheres very firmly. If the epithelium on the dorsum of the tongue is very thick and adherent, the tongue looks pale, and perhaps *white*. If the epithelial layer is very thin the tongue is *red*.

If you look at the under surface and sides of the tongue in the looking-glass, you will observe that these parts have a deep red appearance. The epithelium upon the sides, and the deep aspect of the tongue, consists of a layer so thin that the color of the blood is seen through the epithelial tissue. The degree of redness varies according to the distension of the vessels, and depends upon changes in vascular distension like those which determine the redness or pallor of the skin. In blushing, the small vessels of the skin of the cheeks suddenly distend in consequence of an inrush of blood permitted by the sudden yielding and dilatation of the little arteries continuous with them, and the same phenomenon under certain circumstances occurs in the vessels of the tongue.

The Dorsum of the Tongue.—On the dorsal surface of the tongue generally, the epithelium is arranged to form a layer of considerable thickness, so that in places the red color of the blood is not seen. In health the general color of the dorsal surface inclines to pale red, but in certain forms of disease it becomes of a bright red color, almost like raw beef, and is in consequence sometimes spoken of as "beefy." This seemingly raw condition depends partly upon the desquamation and falling off of a good deal of epithelium, so that the layer covering the subjacent structures is reduced in thickness, and partly upon the capillaries being distended with blood. You can see the deep red color of the blood through the epithelial layer, and the tongue looks raw. The mucous membrane of the stomach and of other parts of the intestinal canal participates in this change. There is desquamation of the epithelium and under turgescence of the vessels beneath.

In health there are to be seen here and there over the dorsal surface little spots, which are of a bright red color. Upon more careful examination, it will be found that the red spots are really small papillæ with a constricted neck, in shape resembling that of a mushroom, and known as the *Fungiform* (fungus) *Papillæ*. The epithelium investment of the fungiform papillæ is extremely thin, and the blood-vessels and terminal nerve networks lie just beneath. The papillæ in question always appear red, and can therefore be easily detected here and there amongst the filiform or conical papillæ, which are more uniformly spread over the dorsal surface of the tongue.

The epithelium covering the surface of the filiform papillæ is so thick that we cannot suppose sapid substances could quickly pass through it, or between the edges of the overlapping cells, and come in contact with the nerves beneath. These filiform (*filum*, a thread, and *forma*, likeness) papillæ have probably nothing to do with the sense of taste, but are important organs of touch, much concerned, it may be, in the process of placing the food in the proper position for mastication and deglutition. It is the fungiform papillæ and the soft red mucous membrane at the sides and back of the tongue, and that of the palate and fauces, which are concerned in taste.

As regards the color of the tongue, it may be remarked, generally, that if the epithelial layer on the organ is thin, the tongue will be red; if very thick, it will be white; if rather dry, of a dull brown or dark brown color;

and if there is an abundant accumulation of soft and moist epithelium upon its surface, of a very opaque dirty white.

The Tongue in various Derangements.*—I shall now consider the changes which occur in the tongue, and the peculiar characters assumed by the organ in different states of health. The subject has received attention from the very earliest ages, and not only from medical practitioners. It is in all respects worthy of most attentive consideration. Not a few persons, ignorant of medicine, have been in the constant habit of studying the state of the tongue. To many it is a matter of grave anxiety through life, and men have been known to use the looking-glass every day for half a century or more for the purpose of observing the daily changes which occur. Especially does the tongue excite the greatest attention and interest among the members of that large section of civilized man which knows not what it is to feel perfectly well—to be free from discomfort of every kind, and not to ail in anything.

It has been stated that changes in the tongue are frequently associated with somewhat similar changes occurring in other parts of the very extensive system of mucous membrane concerned in the preparation, digestion, and absorption of food. We have now to consider how such extensive changes are probably occasioned. One part of the mucous tract may participate in the phenomena occurring, it may be, at a considerable distance away in this membranous texture. This participation is doubtless due to the circumstance that the nerve-centres presiding over the several actions occurring in different parts of the mucous membrane of the alimentary canal are connected together by commissural fibres. The actions of the numerous minute nerve-centres are also harmonized and co-ordinated by intercommunicating cords.

The extensive gastro-intestinal tract of mucous membrane is indeed supplied with one system of nerves, the great characteristic of which is extensive distribution and intimate intercommunication, so that when one portion is deranged the action of others is often disturbed. In certain forms of disease a local affection of limited extent often provokes an altered and pathological action of twenty or thirty feet of intestine or more, and may affect the character of the secretions from gastric and intestinal glands at a distance from the seat of actual lesion.

Very slight changes as regards diet will lead to reduction of the secreting action of the stomach glands. The mucous membrane often becomes less moist than it should be, and the secretion from every part is reduced, though it would be incorrect to say that the membrane became dry. The mucous membrane of the mouth and the glands connected therewith may participate in altered action going on in the stomach. In practice we invariably find that in fevers, and indeed in slight attacks of feverishness, when the temperature of the body has risen only two or three degrees, say in the common pathological change which everybody has experienced when he has taken cold, there is imperfect action and deranged secretion in the stomach. For several hours, perhaps for two or three days, there is in most cases defective formation of the substances which form the all-essential constituents of saliva, the gastric juice, and other secretions poured into the intestinal canal. One consequence is that the ordinary desire for eating is not present, and if the person eat in spite of his disinclination to do so, further derangement, perhaps severe pain and indigestion, may add to his troubles, if he has not the

* For what is here presented to the reader concerning the various physical phenomena connected with the human Tongue and the mucous membrane—the inner surface or *lining* of the human system—we are largely indebted to the writings of that eminent author, Lionel S. Beale, M.D., F.R.S., the distinguished Professor of the Principles and Practice of Medicine in King's College, London.

good fortune to escape by free vomiting or by the occurrence of diarrhœa, or both. Under such circumstances it is the best plan to starve, or, if the person is weak and feeble, he might take Milk, Beef-tea, or Strong Soup in very small quantities, at short intervals of time (an hour or two hours) until healthy action returns.

It is probable that under the circumstances I am considering, the various materials out of which the mucus which is secreted on the surface of the mucous membranes and by the glands connected with them, are not separated from the blood, or are present in an altered state. In fevers, and even in slightly feverish conditions, I believe that those complex compounds from which the cells of the salivary glands form saliva, and those out of which the gland cells of other parts of the alimentary canal develop the marvellous and peculiar substances which play so important a part in digestion and ultimately in nutrition, are not drawn from the blood through the walls of the vessels. This deranged action of an extensive system of glandular organs necessarily affects the composition of the blood (which also suffers in other ways), and thus the action of every tissue and organ in the body may for a time become more or less deranged.

When we come to consider the nature of the changes occurring in feverishness, we shall see that in all fevers, and in every febrile condition, digestion, and the action of the alimentary canal are invariably disturbed, and often to an alarming extent. Every intelligent mother knows that in infants and young children the febrile state often commences with derangement of the stomach, and may be occasioned by improper food, as, for example, hard, unripe apples. In this way important alterations in the blood and general derangement of the system result from pathological phenomena, which start from disturbance in the action of, it may be, only a small portion of the mucous membrane of the alimentary canal.

It is very important that the organs whose action is disturbed should be permitted to rest for awhile. After a time there will be good evidence of returning action, and possibly of undue action. A greater amount of action than occurs in health may be noticed, but this is soon followed by reduced activity, and, at length, the proper degree of action. By degrees the normal state of health is reëstablished, without any permanent lesion or structural change of any kind. In such derangements, if we can cause the return of secreting action, if we can get these various glands to act freely, the abnormal condition will be relieved, and the normal, or healthy state restored, sooner than if matters are left to right themselves. I think good service can be rendered, not only by effecting the expulsion of the irritating matters from the stomach or bowels, but also by diminishing the febrile condition set up in these cases, and in others in which febrile development is more obscure and difficult to trace. It will be well, before further discussing this part of the matter, to draw attention to one or two other points of general interest in connection with the febrile state.

In an ordinary cold the mouth is often more or less dry or clammy. The throat feels dry and rough and the appetite becomes impaired. Little gastric juice is formed under these circumstances, and probably the quantity of intestinal fluid that ought to be secreted is less than usual. You will also notice, if you pay careful attention to the matter, that the kidneys do not secrete in the normal degree, while the bowels are often constipated. You will find, when suffering in this manner, that if you take a warm bath or a hot-air or vapor bath the free action of the skin will be excited and the unpleasant sensations cease, and, at least for a time, you feel very much better. You may even experience complete relief. If you take a few doses of Nitrate of Potash, or Bicarbonate of Potash, or Liquor Ammoniæ Acetatis,

or some other saline which acts on the skin and kidneys, you will be greatly relieved.

This relief is, I think, consequent upon the removal of substances from the blood which had been accumulating in that fluid to its detriment, and which, as they circulated, caused derangement of action in many tissues and organs in the body. I shall direct attention to the general, and often widespread changes which result from deranged actions, confined to very limited areas of tissue or organ, and show that, at least in a number of cases, this may be explained by the alterations induced, directly or indirectly, in the character and composition of the blood. Hardly any of the ordinary physiological changes of the body can be deranged without some alteration taking place in the character of the blood. The action of the digestive organs will be disturbed at once; and of this we shall soon have indications in the loss of appetite and various unpleasant sensations in the stomach, as well as by the altered state of the tongue.

Of Dry and Moist States of the Tongue.—One of the commonest changes in the tongue is undue dryness,—a condition which may depend upon a variety of circumstances. The moisture of the parts within the mouth varies greatly, and even, in most persons, the mouth is not equally moist at all periods of the day and night. The activity of the process of secretion varies; the quantity of fluid in the interstices of a thick tissue like the skin or the dorsal surface of the tongue varies with every change in the tension of the walls of the capillaries, the pressure of the circulation, the activity of the lymphatics, and a number of other circumstances. It is obvious that the varying rate of evaporation from the mouth and nasal passages will cause alterations in the tongue, as regards moisture.

The dryness of the dorsal surface of the tongue, a change not uncommon in many forms of disease, cannot be attributed only to changes taking place upon the surface of the mucous membrane, for the secretion of fluid by the glands beneath might entirely compensate, or more than compensate, for the loss of fluid by evaporation. In many cases the dryness seems to be due to alterations which occur beneath the mucous membrane, affecting the nutrition of the deep cells of the cuticular coverings of the papillæ, and in part to the change in the composition of the blood itself and an altered state of the blood distribution, as determined by dilatation of the little arteries, consequent upon relaxation of the circular muscular fibres, occasioned by change in some part of the nerve apparatus which governs their calibre. In ordinary health the moist condition of the tongue is due partly to the transudation of fluid through the walls of the vessels towards the epithelial and other tissues, and partly to the presence of fluids secreted in varying quantities and poured into the cavity of the mouth, particularly the saliva. The surface of the tongue and inside of the mouth are thus kept moist. The moisture of the tongue and interior of the mouth will, however, be very much favored if the air we breathe is moist, while in the opposite state of things the tongue will become more or less dry from evaporation. A greater amount of fluid will be required to maintain the mouth in a moist state in dry than in damp weather. The quantity of vapor communicated to the expired air which traverses the cavity of the mouth is liable to variations according to changes which occur in the lungs and air passages. The blood, as it traverses the capillaries of the lungs at different times, contains very different quantities of fluid, and, therefore, during some periods much more vapor will be given off from the blood to the air about to be expired than at other periods. Not only so, but the rate of exhalation of watery vapor from the blood is influenced by a number of complex conditions, which are continually undergoing change. Every time we expire through the open mouth the air, laden with moisture,

is driven over the mucous membrane of the mouth and tongue. However dry the *inspired* air may be it becomes nearly saturated with moisture as it leaves the air-cells of the lungs. This damp air playing over surfaces it traverses assists in keeping them moist.

The mouth and tongue, however, may readily become dry, and a very unpleasant state of things will be experienced. Those who have acquired the bad habit of sleeping with the mouth wide open frequently suffer from the derangement in question. We should close the mouth before falling asleep, and during sleep we should breathe freely through the nose. In cold weather it is important that the cold air which is inhaled should pass over the surface of the mucous membrane of the nasal passages, in order that it may be warmed before it reaches the windpipe and lungs. The air which receives a supply of moisture is better adapted for the further complex chemical changes effected by respiration, which changes, as many of you are no doubt aware, are most actively carried on during the period of sleep. Always have the habit of keeping the mouth closed and breathing through the nose, not only during sleep, but generally, for, especially in cold weather, it is important upon many grounds that the inflowing air should take this circuitous route rather than the more direct one by the mouth.

As soon as the mucous membrane of the mouth or adjacent passages gets dry a desire for fluid will be experienced. The person longs for a little water, and when he gets it he moves it about in all parts of the mouth, so as to thoroughly moisten the mucous membrane; *but this operation requires to be very frequently repeated, as the surface when moistened with water gets dry much sooner than when bathed with the natural fluids of the mouth.* In many cases you will find glycerine and water, in the proportion of one part to five or six, more effective than pure water. A little lemon-juice may be added to make the mixture more palatable, and sometimes flaxseed tea with glycerine will be better than water.

If the mouth becomes very dry, articulation will be difficult or impossible. No one can speak properly if his mouth and tongue lose their ordinary moist condition; and you may have noticed that many orators, accustomed to address audiences for a considerable period of time, are obliged to sip water every now and then. In perfect health the quantity of saliva that flows into the mouth varies remarkably at different times, and the proportion is diminished in any little derangement of the system. The mouth feels more or less dry and uncomfortable until the free secretion of the salivary fluid is resumed. Some speakers are seen to take a few drops of fluid every four or five minutes; and I much fear that in some of these cases the dry state of the mucous membrane has resulted from the introduction of too much alcohol into the system, a practice which soon causes important changes in the blood, and eventually leads to impairment of the action of the secreting glands.

Of Exciting the Flow of Saliva.—In many cases in which the secretion of saliva is deficient the increased action of the salivary glands may, in a very simple manner, be excited. Anything which promotes the flow of saliva and induces the glands of the mouth to secrete more freely will, to some extent, relieve a dry state of the mouth and tongue. Commonly, the mere irritation, stimulation, or excitation of the sensitive nerve-fibres spread out beneath the epithelium of the mucous membrane of the mouth, brought about by the contact of some pungent or acid material, is sufficient to cause a very free salivary secretion. A small piece of lemon just placed in the mouth will often cause a free flow of saliva; and there are various pungent materials which are introduced into the mouth for the very purpose. The mere moving about in the mouth of some solid body, such as a smooth pebble, will, through reflex action, promote the secretion of the saliva. The pebble acts upon the

nerves and an increased flow of saliva follows. This is owing not only to the expulsion of the secretion already formed, but to increased secretion of salivary fluid by the gland-cells.

We have remedies which belong to the class of Sialogogues (σιαλον, saliva, and αγω, I expel). Horse-radish; Mezereum; Ginger; Pyrethrum, the root of Anacyclus Pyrethrum, the old Pelletory of Spain, are examples of well-known sialogogues. But there is one better known, though its use as a sialogogue is in these days almost entirely limited to some of the nautical people—I mean Tobacco, which, if used at all, should be smoked, not chewed, and smoked only in moderation and in the open air.

Certain salts also excite the secretion of the salivary glands. *Chlorate of Potash* (*Dose*, twenty grains in water) and *Nitrate of Potash* (*Dose*, five to twenty grains dissolved in a wineglassful of water) are among the best. Sucking *fused nitre* (nitre balls) is an old and very favorite treatment for many slight ailments.

You may now get *Nitrate of Potash*, generally known as *Nitre*, *Chlorate of Potash*, *Bicarbonate of Potash and Soda*, and a number of other useful saline remedies, compressed into small lozenges or pilules containing five grains each. One or two may be allowed to slowly dissolve in the mouth three or four times a day, half an hour or more after a meal, and you will find they will cause a very free flow of saliva. When the mouth becomes dry at night, it is a good plan for the sufferer to sip now and then a little cold *Linseed tea* (one tablespoonful of *Linseed* infused with a pint of boiling water; when cold, the seeds may be strained off, and a little sugar added). Or the viscid fluid may be flavored with lemon-juice, and sweetened with glycerine in cases in which it is not desirable to give sugar. Or a mixture of the latter with water,—one of glycerine to five or six of water, may be used.

But the most important and most potent of all our medicines used for increasing the action of the salivary, and most if not all other glands in the body, is Mercury. For a dry, uncomfortable state of the mouth, take only half a grain of calomel, or even considerably less than this, within five or six hours a free secretion of the saliva into the mouth will occur, and the mucous membrane of the mouth, fauces, and neighboring parts will become moist and more comfortable. All the little labial and buccal glands will secrete more freely. Instead of Calomel, you may use one or two grains of Blue Pill or Gray Powder. The last (Hydrargyrum cum Creta) is the mildest, and, perhaps, the best of all the mercurial preparations we use. In children's ailments it is one of the most efficient remedies handed down to us. In my early days we used to keep equal parts of powdered Rhubarb and Hydrargyrum cum Creta already mixed, and give from one to six grains of the mixture to children, according to age. I continue to use this most useful prescription. The only objection is its nasty taste, even in jam; but for older children and adults the powder may be made into pills with a little Extract of Henbane.

White Moist Furred Tongue.—In some conditions the tongue presents a very peculiar appearance, being very white in consequence of the accumulation of a quantity of soft moist epithelium on its surface, with mucus and secretions from some small glands, with multitudes of bacteria, fungi, and the *débris* of food. This state of tongue is seen in its most remarkable degree of manifestation in acute rheumatism. Unfortunately, we have too many opportunities of studying the tongue in this serious malady in well-marked cases of the disease.

Pale Tongue, Anæmia (literally bloodlessness).—In Anæmia the blood is poor and defective in red blood-corpuscles. In anæmic persons and in those

suffering from various forms of disturbed digestion, the tongue is flabby, the vessels being imperfectly filled with blood, and the blood itself poor in red corpuscles. The dorsum of the tongue appears pallid, and a quantity of moist epithelium adheres to its surface. The tongue itself is sometimes visibly larger, swollen or sodden, œdematous as well as soft and flabby. The edges are much indented, and marked with impressions of the teeth. This state of tongue improves under the influence of quinine and other tonics, and other remedies which improve the digestive power of the stomach.

In Slight Chronic Rheumatism the tongue is frequently white, covered with a thick, blankety fur. The white furred tongue is more moist than is the organ in the normal healthy state; its epithelium is abundant and sodden, and everywhere invaded by fungi. Numerous low organisms are actually growing and multiplying very rapidly in the moist, soft, imperfectly-formed epithelium which continues to be developed and to accumulate while the rheumatic state lasts. Various organic matters also collect, and decomposition may take place in the spongy mass, formed in such great abundance. The various fluids of the mouth also contribute to increase the thickness of the white fur so characteristic of the disease.

In many temporary derangements of the stomach and bowels we also find this moist furred condition of the tongue, and it may last for a few days at a time. The tongue of inveterate smokers is generally white and dirty. *Some persons constantly have a foul tongue, although they are, nevertheless, in good health. A constantly dirty tongue, like some other departures from the normal state, is not incompatible with considerable vigor, good working power, and longevity.*

Bright Red Tongue.—In striking contrast with the white blankety tongue is the red tongue, met with in certain forms of fever, the surface being smooth, of a bright-red color, sometimes appearing raw, and not unfrequently being dry and glazed. The red tongue is often seen in scarlet-fever. In the early stage of the disease the tongue is often furred, and the red fungiform papillæ are seen to project through the adherent epithelium, and appear as bright red spots. But in a few days the superficial layers of epithelium of the tongue and of the lining membrane of the mouth and fauces are detached, desquamate (*de*, from, *squama*, a scale), and then the whole surface of the tongue is red. The fungiform papillæ are swollen and the vessels much distended, the surface more or less uneven, and we have the appearance somewhat resembling that of a strawberry—hence, *the strawberry tongue.*

The smoothness and redness of the tongue last for some time, for the old cells of epithelium having been completely detached, some time must elapse before the new cells have sufficiently accumulated to prevent the red color of the blood being so distinctly seen in the vessels beneath. The raw, beefy character of the tongue is also observed towards the close of many exhausting diseases, as phthisis (to corrupt), and some forms of pyæmia. Aphthous sores also form sometimes in conjunction with this state of the tongue.

The Dry Brown Tongue.—Strictly speaking, the dry brown tongue is hardly ever seen in slight ailments, and I shall only say a few words about it for convenience' sake. Do not forget that a state of tongue somewhat resembling it may result from sucking licorice, black currants, or black cherries; and other dark fruits may produce temporary staining of the tongue. These give a very peculiar appearance, which you ought to be able to recognize at once, and it is well also to bear in mind that the juices of some fruits, or other fluids having the property of staining the tongue or skin, are some times applied, in order to puzzle.

In typhus and typhoid fever, and many other low conditions, the tongue may become brown or black, owing to changes occurring in the epithelium,

which, with mucus and secretions from various glands, has accumulated upon its surface and has got dry. If the feverish condition reaches any considerable degree of intensity, as I have already told you, the moist surfaces about the mouth soon become very dry and cease to secrete. They are no longer bathed with healthy moisture, the mucus is no longer formed, and the secretion of the salivary and other glands is diminished to such an extent as to render the swallowing of food extremely difficult. This is one of the reasons why we give patients suffering from fever, Milk and Beef-tea, and put them on slop diet. All the nutrient matter required should be introduced in actual solution, or in a very moist state, as in the form of pap; or by finely-divided solid matter suspended in beef-tea, soup, or milk, and thus much nutritious matter may be given in cases where it is absolutely required to support life. In milk some nutrient materials are dissolved, while fatty matter exists as very minute globules suspended in the fluid, and therefore in a state in which it is very easily absorbed into the blood.

In many cases relief will be afforded if the nurse will occasionally paint, as it were, the dry mucous membrane of the tongue and mouth with a little weak Glycerine and Water (one part to nine or ten of water) with a camel-hair brush. This is very necessary in some severe forms of fever in which the tongue and mouth get very dry and painful. After the tongue has been dry for several days, it is not unusual for deep fissures to form upon its surface, and these fissures may go quite through the mucous membrane, and even reach the vessels and nerve-fibres in its substance. Escape of blood (hæmorrhage) frequently occurs, and the blood accumulates and helps to form the dry brown matter which adheres to the tongue. Sometimes much of the hæmoglobin of the blood is disintegrated while the blood circulates, and may make its way through the capillaries without rupture; but more generally the blood escapes from the capillaries in the usual manner, in consequence of their over-distension and the formation of longitudinal rents or fissures in their walls. Unless sensation is previously numbed by the presence of morbid substances in the blood, the occurrence of the fissures is associated with much pain, discomfort, and distress.

The blood from the vessels, and the viscid mucus which collects upon the tongue and lips, together form dark-brown or black flaky masses (*sordes*, from the Latin *sordes*, dirt, filth), which accumulate about the mouth, and often firmly adhere to the surface of the teeth. These may sometimes be pulled off, but generally leave a raw and sore surface beneath.

The dry brown tongue passes by gradations into the black tongue, characteristic of some of the very worst forms of fevers of former days, and which are now occasionally met with in the East. As the severity of the feverish state passes off, the tongue begins to clean, usually first at the edges. This "cleaning" results from the growth of new epithelium on the deep surface, and the detachment of the old cells with mucus, fungous growths, particles of food, and probably a little blood, which have been accumulating and have adhered to the surface during the illness. As convalescence approaches, all this is cast off. To prevent this altered and partly decomposed organic matter being swallowed, the mouth should be frequently rinsed with Condy's Fluid and water (one teaspoonful to a tumbler of water), or a very weak Solution of Sulphurous Acid (one part of the Sulphurous Acid, Acitum Sulphurosum of the Pharmacopœia, to five or six parts of water), or of Hyposulphite of Soda (five grains to an ounce of water).

Hemorrhage.—It is desirable that I should tell you exactly what happens when Hemorrhage takes place. The word is derived from two Greek words, αἷμα, "blood," and ῥηγνύμι, "to break forth." Hemorrhage means, therefore, a breaking forth of blood. In former days we used to be told that there

was such a thing as a passage of blood corpuscles through closed membrane, through the walls of vessels, in some mysterious manner, without any rupture or solution of continuity in their walls. This was called *hemorrhage by exhalation*, and in my student days the opinion was still entertained that red blood corpuscles might traverse a capillary wall by "exhalation." At an earlier period the capillaries used to be spoken of as exhalant vessels, and their function was regarded by some as opposed to that of the absorbents.

Under certain circumstances blood corpuscles may pass through the thin walls of capillary vessels without the vessels being destroyed or permanently damaged. In all cases, however, an opening, it may be temporary only, in the vascular wall does exist. The capillary is not actually torn across, but when it becomes much distended by the accumulation of blood within it, the thin vascular walls are stretched and rendered very thin. Longitudinal rents or fissures result, through which the blood corpuscles, a few at a time, easily escape. When the pressure is relieved, the elastic wall of the vessel will contract, and the fissures close up, the capillary transmitting the blood as freely as it did before.

The term *Hemorrhage*, then, is strictly correct, and always means the breaking forth of blood from a vessel, large or small.

Chronic Cracks and Fissures of the Tongue.—This state of tongue is very common in persons who have long suffered from weak digestion. The tongue is generally rather pale, quite moist, and from time to time becomes covered with white fur, which is often distributed in patches. The cracks are usually rather deep, very irregular in arrangement, and differ much in number in different cases. For the most part they are permanent, but occasionally new ones form and the older ones increase in depth. The papillæ at the edges of the fissures occasionally become sore. Aphthous patches of irregular shapes may appear and increase in size, extending often to the bottom of the fissures, and sometimes the tongue becomes so sore that eating solid food is a painful process. The cracks may go on separating until a raw surface is exposed at the bottom. This is often exquisitely painful; and if any alcohol, pepper, or salt substance is taken, the almost bare nerve fibres exposed in the fissures are instantly affected. Not unfrequently the pain and discomfort are so great that the patient is deterred from eating, and in consequence the health suffers. A moderate degree of the condition of tongue referred to is extremely common. *It does not usually interfere with longevity or predispose to any more serious derangements. Those who suffer in this way are obliged to be very careful in diet and ought to live very moderately. If they exceed in any way, digestion becomes deranged, the tongue gets foul and very sore, and some days must pass before the usual state of health returns.* In such cases the bowels are sluggish, but you will generally find that mild purgatives, only in small doses can be borne. Three or four grains of Compound Rhubarb Pill, two or three nights running, with perhaps a little Effervescing Citrate of Ammonia, Soda or Potash, or some such simple saline, three or four times daily, will be of use, and expedite the return of the normal state. Carbolic Acid Lotion (one part to one hundred of water) is also a good application, especially if the fissures are associated with the presence of aphthous spots, with vegetable growths on the surface, but the lotion is not a pleasant one to use.

There is, however, another form of cracked tongue common enough and very chronic, which is not to be cured in this simple manner. There are cracks and fissures here and there, but in some situations the surface is too smooth. The appearance is such as to lead one to think that, in the course of very slow pathological changes, many of the papillæ have undergone

change, and have at last wasted and disappeared, just as the villi of the small intestines do in certain forms of disease.

The state of tongue which I am considering may last for years, getting better and worse many times. It is usually relieved, and in not a few cases cured, by Iodide of Potassium. The remedy must be taken for two or three or more weeks at a time, then stopped for a short period, and resumed again. Begin with two grains, and gradually increase the dose to five or six grains three times daily, and it is a point to give it dissolved in as much as half a pint of water.

Some cases improve rapidly on Iodide of Mercury. You may take from the thirty-second to the sixteenth of a grain of the Perchloride of Mercury, that is, from thirty to sixty drops of the Liquor Hydrargyri Perchloridi, with five grains of Iodide of Potassium, and a little Syrup of Ginger, and perhaps twenty minims of Battley's Liquor Cinchonæ, in four ounces of water, an hour after food, twice or three times a day, for two or three weeks at a time. These cases, and especially if they are cured by the medicine I have recommended, are generally considered to result from syphilis, but I feel confident that all are not of this nature. These remedies are most useful in the treatment of many conditions which have nothing whatever to do with syphilis.

The Mucous Membrane of the Mouth, etc.—Associated with the changes taking place in the epithelial surface of the back of the tongue, we have in many cases, also, corresponding changes in the mucous membrane of the mouth, the palate, the fauces, and the throat. The mucous membrane of all these parts is continuous, and no wonder the different sections are sometimes affected in the same manner. The action, also, not uncommonly extends downward through the narrow chink of the Glottis into the Larynx and wind-pipe, or trachea. The voice may become hoarse in consequence of the mucous membrane being swollen, dry, and otherwise altered. Not unfrequently this dryness extends to the *posterior nares*, and affects the mucous membrane at the back of the nose, giving rise to a very painful sensation, a slight degree of which most have experienced when an ordinary cold is about to come on.

If you look in the looking-glass you may see at the back part of the widely opened mouth, when a cold is coming on, the mucous membrane of a darker red than usual, and here and there it may appear glazed and dry Not only so, but if you try a simple experiment you will discover that an important change has taken place in the sensitiveness of the surface of the delicate mucous membrane of the soft palate. In health the slightest touch will excite movements of deglutition by reflex action, but when the membrane is dry and sore, there is no such sudden response, and contraction of the pharyngeal muscles follows very slowly, or does not occur at all. You may touch the palate firmly without any effort to swallow being excited. This benumbed state of the highly sensitive surface generally is only temporary, and consequent upon the changes which have occurred just beneath the epithelium, where extremely delicate afferent nerve fibrils are distributed in immense numbers, but the condition may occur frequently, and some are hardly ever free from slight derangement of the mucous membrane of the soft palate, fauces, and upper part of the pharynx. In the treatment of this state of things, Inhalation of steam simple, or with a little Ammonia or Camphor, is often of use. Simple forms of apparatus are now made for the purpose.

Inhalers are now largely sold. Many are made of china, and so arranged that various volatile substances may be easily inhaled with the steam of warm water The latter alone often affords great relief in irritable states of the mucous membrane of the throat and air passages.

Bronchitis Kettle.—The air of the sick-room may be rendered moist by arranging an ordinary kettle in such a manner that the steam comes direct from the kettle-mouth into the room, instead of going up the chimney. The spout of the kettle may be lengthened by adding a foot or more of tin tube, or the special bronchitis kettle made for the purpose may be used.

In derangements of the kind, the application of astringent substances to the palate and fauces often afford relief. You may apply with a large camel-hair brush a little of the Glycerine of Tannic Acid, the Glycerinum Acidi Tannici, or a solution of Nitrate of Silver (five to ten grains to the ounce of Distilled Water), three or four times daily. A few minutes after application the mouth should be gargled out with Cold Water or Salt and Water (one teaspoonful or more to half a pint); but the best plan of treating such affections, especially if they are chronic, is the direct application of the astringent or other solution, in the form of Spray.

Of the Use of Spray.—Of late years very many remedies have been applied to parts about the mouth in the form of Spray, and great advantage has resulted. The practice was first employed in the treatment of diseases of the Larynx, and many ingenious instruments have been invented for the purpose of obtaining a cloud of watery vapor in a very minute state of division. Spray Producers have been very much simplified, as well as rendered much more perfect. There are two principal forms of apparatus. One in which the "Spray" consists of high pressure steam, a stream of water with the required substances dissolved in it, being minutely divided into Spray by the steam as it issues from a tube communicating with a reservoir. The steam is obtained by boiling water in a strong copper boiler specially made for the purpose and heated by a spirit-lamp. In the other, the degree of pressure required for sufficiently comminuting the liquid to be converted into Spray is obtained by a little india-rubber ball bellows. Both forms may now be obtained of the surgical instrument makers for a few shillings, and are adapted for use in the treatment of affections of the mucous membrane of the mouth, throat, nose, and larynx. The solution containing the material to be projected against the mucous membrane may be much stronger if the steam Spray Producer be used than if the air instrument be selected, because, in the first case, the solution converted into spray is diluted in strength by the steam which is used. Some of the best Spray Producers are those used by Professor Lister in surgical operations.

In cases of dryness of the mouth, tongue, and throat, water alone may be used in the form of spray, or water with the addition of one-tenth part of pure glycerine. Alum spray solution is a powerful astringent. Ten grains of Alum to the ounce of water is a good proportion. The same quantity of Tannic Acid may also be tried. The spray solution of Carbolic Acid may contain two grains to the ounce of water. Of Chloride of Sodium, that is common salt, from two to twenty grains or more to the ounce of water. Chlorate of Potash five to fifteen grains to the ounce. Nitrate of Potash solution may be used of the same strength. The spray solution of Nitrate of Silver should contain a grain to the ounce of distilled water.

Be careful to filter the spray solution before you use it, and prevent dust from getting into it, as the fine tube of the spray producer is very easily obstructed by any small solid particle, and is cleaned with difficulty. I find it a good plan to cover the end of the tube which dips into the solution with a piece of muslin tied round it. In this way solid particles which may be suspended in the fluid will be prevented from entering the spray-tube. The spray instruments, the tubes of which are made of vulcanite, and worked by the hand, answer for ordinary purposes when five minutes' application two or three times a day is sufficient, but for more prolonged use a good steam

apparatus is the best. Simple spray producers worked by the hand can be readily obtained. I think, as time goes on, we shall find that the spray method is well adapted for the treatment of certain forms of skin disease, and many other cases in which it is not used at present. There is no difficulty in the use of the spray producer, and the patient can be easily taught to use the apparatus himself. For some time I have had a large spray producer of the form used by Professor Lister in constant use. It answers perfectly for many purposes, and I *often employ it for disinfecting persons, clothes, or rooms. When attending any case of contagious disease, I can expose every part of my clothes, as well as my hair and hands, to the action of a twenty or thirty per cent. solution of carbolic acid.* So quickly can the steam be generated that the whole process does not take more than ten minutes or a quarter of an hour.

Metallic and other Tastes in the Mouth.—Patients not unfrequently complain of peculiar tastes in the mouth, described as metallic, salt, acid, sweet, bitter, and even fæcal (Fæx, dregs). The odorous matter of some putrid smells is sometimes absorbed into the blood from the inspired air, and afterwards exhaled, the smell and taste of the breath remaining for many hours after the individual has left the neighborhood of the odoriferous matter. In various derangements of the stomach peculiar tastes are experienced, and by patients are compared to the flavor of rancid butter, valerian, vinegar, and many other things. Generally speaking, the symptoms complained of may be relieved by exciting the excreting organs.

Purgatives, especially small doses of Gray Powder (one to three grains) repeated every third or fourth night, for a fortnight or longer, usually afford relief. Exercise, free perspiration in a warm bath, Diuretics and Sudorifics are also useful.

Thrush, Aphthæ—Sores and Ulcers in the Mouth.—Sores of the mucous membrane of the mouth are exceedingly common. These superficial sores are spoken of as Aphthæ, from the Greek ἅπτω, I inflame. The derivation is not a good one, for, although no doubt the aphthous spots are associated with inflammation, they are not caused by this process. The meaning of this, like many other scientific terms, has changed as our knowledge has advanced. Aphthæ are little superficial ulcer-like depressions, sometimes with infiltration and consequent thickening of the tissues around, which form upon the surface of the mucous membrane. Sometimes the epithelium only seems to be affected, but more often the sore extends deeper, and damages the structure of the mucous membrane itself. Aphthæ are extremely common in weak, ill-nourished infants, but are not unfrequently met with at all ages. In advanced age the disease occurs, especially in those who have suffered from prolonged exhausting maladies. In various forms of chronic phthisis, and in some forms of pyæmia, they are present, and may cause great discomfort to the patient. It is difficult to explain precisely the changes which initiate the formation of aphthous sores, as, for example, those which are formed on the side of the tongue, just where the organ comes in contact with a tooth which is undergoing decay. The formation of a painful ulcer is the result. Such ulcers often affect the mucous membrane lining the lower lip, where the orifice of a labial gland is situated. Upon examination, we find upon the aphthous spot a quantity of soft, moist material, largely of epithelial *débris*, imbedded in and everywhere invaded by fungi, especially a form of Oidium albicans in various stages of development.

It has been supposed that the fungi are the cause of the aphthæ. The spores of the fungi, it is said, grow and multiply on the surface of the mucous membrane, and thereby cause inflammation and ulceration of the surface. Secretion takes place and the epithelium becomes soft and spongy, and thus

the growth and spread of the fungus is favored. The constituents of all organic secretions at the temperature of the body very soon undergo decomposition, and the germs being already present, fungi would soon develop, and would grow there and multiply. Instead of the fungi *causing* the disease, it is more probable that morbid actions on the surface of the mucous membrane give rise to changes favoring the development and the growth of the vegetable organism, and that in these prior changes the true origin of the disease is to be sought. Fungi and their spores are invariably present, and their mere presence cannot possibly explain the development of the obstinate little ulcers which are now and then found in persons in good health, though they trouble such only for a short time. I say in good health, but have little doubt that I use the term incorrectly, and though I cannot tell the precise particulars in which the normal condition is departed from, the fact of the development of aphthæ is, I consider, proof that the person is not in perfect health. The affection is not purely local, and it is most probable that the spots in the mouth were preceded by, and intimately connected with, an altered state of the blood. These little aphthous ulcers are sometimes difficult to get rid of, and of course a great number of *infallible* remedies have been discovered. Some of the most useful applications I will now refer to.

Treatment of Aphthæ.—Honey and Borax, the Mel Boracis of the Pharmacopœia, is a well-known remedy for Aphthæ, and is efficacious in children, adults, and old people. Chlorate of Potash also seems to exert some influence. In adults the best remedies are those known to chemically change the fluids upon the surface of the spots which favor the development of fungi, and upon which they live. Tincture of Perchloride of Iron, or the Liquor Ferri Perchloridi of the British Pharmacopœia, is a very potent local remedy. It may be applied to the surface of the ulcer with a camel-hair brush. Dip the brush into the Tincture of Perchloride of Iron, and just touch the surface of the ulcer; leave it for a moment or two, and then tell the patient to wash out his mouth with water. But it is better to mix the iron with glycerine. Equal parts of pure Glycerine and Tincture or Solution of Perchloride of Iron make a valuable application. This may be applied with a camel-hair brush, or one teaspoonful may be mixed with half a tumbler of water or more, and the mixture used frequently (every two or three hours) as a gargle, or as a wash for the mouth. The patient should rinse the mouth with a little tepid water afterwards, for the frequent application of iron without due care causes temporary discoloration of the teeth. The Glycerine assists the adhesive properties of the solution, and the morbid changes taking place are interfered with, the low vegetable organisms destroyed, and healthy action is soon reëstablished.

Another useful local remedy is Nitrate of Silver. The stick of fused nitrate of silver is lightly applied to the spots, or a strong solution (ten grains to an ounce of distilled water) may be applied with a brush every day until the cure is effected.

The Thrush of infants usually yields to increased care in feeding. A very mild laxative is sometimes required, and oftentimes a little Lime-Water mixed with the milk is of great use. A little of the Mel Boracis may be put into the infant's mouth from time to time.

Offensive Breath.—I will now briefly refer to a derangement which occurs sometimes in connection with deranged gland action, and which gives extreme annoyance. This is the emission of a very offensive odorous compound in the breath. It comes partly from the glands connected with the upper part of the respiratory and alimentary mucous membrane of the mouth and throat, and partly probably from the blood as it traverses the pulmonary

capillaries. Even the individual himself is greatly annoyed by the smell which he exhales.

The odor is not by any means the same in all cases, though I cannot tell whether chemical substances of different kinds are really produced. The odorous material is, I believe, however, formed in a great many cases by the glands of the mucous membrane of the air passages of the throat and of the mouth. I think these glands secrete the material which ought to be removed in another form by excretory glands in other parts of the body, the action of which is much lessened or stopped in these cases.

As offensive breath depends upon the excretion of a peculiar organic matter from the system, in order to effectually get rid of the tendency try to render more active the process of secretion elsewhere. The offensive material may be got rid of by another channel. In fact we must endeavor to get it, or the material which yields it, separated from the blood by other glands, particularly those which discharge their secretion into a more convenient emunctory. You will generally find that if you excite the action of the ordinary glands, whose office it is to separate odoriferous compounds from the blood, and discharge them into the bowel, the disagreeable smell of the breath will soon cease. *In short, if you can only excite the liver, the largest gland in the body, and the solitary and other excreting glands of the small and large intestines to a little increased action, and keep up the action for a time, the patient will cease to be vexed with the derangement.* Sometimes he is afraid to go into society, or be much in the company of other people, for fear of annoying them, as much as he is himself annoyed by the smell and taste of the air he expires.

Acting upon this view, the first remedies to be tried will be purgatives, diuretics, sudorifics. In all cases antiseptic substances may be used to wash out the mouth frequently. Charcoal Powder mixed with water as a wash for the mouth. A teaspoonful of Tincture of Myrrh in half a tumbler of water is also a good wash. Carbolic Acid is useful in such cases. *A weak solution of Carbolic Acid (one part to two hundred of water) may be taken internally, and the mouth may be rinsed out frequently with a stronger solution. Weak Carbolic Acid spray may also be tried. Condy's Fluid is another useful remedy. The mouth may be washed out several times daily with a solution consisting of half a teaspoonful of the red Condy in a tumbler of water.*

But to effect any lasting relief you must be particularly careful to regulate the patient's diet. Many of those who suffer from trouble of this kind are too fond of rich sapid substances, and perhaps take too much beer or porter; and upon inquiry you will find, perhaps, that they habitually eat more than a not very vigorous stomach can properly digest. The excess of all the good things taken is imperfectly oxidized, and the chemical compounds formed clog the emunctories, and are in too considerable proportion to be got rid of by the various glands whose business it is to remove them from the body. Certain materials remain in the blood, and, instead of being discharged from the bowels, are eliminated in a crude form by the skin, by the glands of the mucous membrane, and in part by the lungs. Thus the expired air becomes contaminated. It is most important that people who suffer in this way should not overeat, should not take more of anything than is required for nutrition and the work of the body. Almost every one does eat more, and many much more, than is required to keep the body in health. In some people, perhaps, in consequence of the liver being less active than it should be, the excess of food, instead of being excreted in an altered form in the usual way by the solitary and other glands of the bowels, undergoes exceptional chemical change, and odoriferous compounds are formed in large

amount, and persistently, to the patient's great distress. The way to remedy this great annoyance is to encourage the more free action of the glands, whose office it is to separate this class of substances from the organism. *Try and transfer the action from the surface of the gastric and respiratory mucous membrane to that of the large bowels.*

For persons who have long suffered, besides giving occasional doses, you must prescribe some mild, harmless purgative, and of this frequent doses may be taken. You must, in fact, take care that the bowels act freely, and that the excreting glands do their work efficiently.

Almost any purgative will have a good effect in many cases. Different preparations of Colocynth, Aloes, Podophyllin, Scammony, Rhubarb, Jalap, Senna, have all been prescribed with benefit. Several other purgatives have been recommended by different authorities. As a rule, it is better not to give large doses, as it is necessary not only to excite the action of the intestinal glands, but to keep it up—to help the glands from day to day to do their work—to give them a little artificial stimulus and no more. From three to five grains of the Pilula Colocynthidis et Hyoscyami, or the same amount of Pilula Rhei Composita; or you may add half a grain or less of the Extractum Aloes Barbadensis, or one-fifth or less of a grain of Podophyllin to half the quantity of either of the pills mentioned. At first, the pill should be taken every night or just before dinner; and when it begins to act, every other day or once in every three or four days. Our object is to regulate the bowels as to cause a daily action. With some persons Scammony acts admirably. One or two grains of Resin of Scammony, *Scammoniæ Resina*, may be added to two or three of the Compound Colocynth Pill, which, as you know, contains a certain proportion. A patient of mine, who died at the age of ninety-five, had taken Scammony two or three times a week, for many years, with the greatest benefit; but neither this nor Podophyllin, nor any purgative that I know of, acts equally well upon all. With a number of purgatives you will often be able to hit upon the right thing. We may often succeed with a combination, but fail to effect the desired object with a single drug.

Mercury is one of the remedies upon which our forefathers relied more implicitly than we do. I think they often gave it too frequently and in unnecessarily large doses, but I think we err in an opposite direction; and some practitioners refuse to prescribe it altogether, and encourage the prejudice needlessly excited in the minds of patients against its use. Many a mother who seems to be shocked at the very name of Calomel, nevertheless frequently gives it in some patent powder which she has used for years, and which, she will tell you, is a most excellent remedy for every complaint of infancy and childhood.

In many instances in which the patient suffers from offensive breath, with a dirty tongue, and a disagreeable taste in the mouth, and defective secretion of saliva, with, perhaps, slight nausea, and fulness or discomfort about the pit of the stomach, you may effect a cure and earn the gratitude of your patient by prescribing a few small doses of Blue Pill, Gray Powder, or Calomel. The medicine should be given with a little Rhubarb, Compound Colocynth Pill, or some other purgative, every third or fourth night, three or four doses in all being ordered, though often one or two only will be required. With some persons, however, no compound of Mercury will agree, and in these cases employ other purgatives, and give various salines to act on the bowels, the liver, and kidneys, especially the Nitrate of Potash, *Potassæ Nitras*, and the Chloride of Ammonium, *Ammonii Chloridum;* five to ten grains of the first and twenty grains of the last, dissolved in two or three ounces of water, on rising and on going to bed.

Impaired Appetite, Loss of Appetite.—Next let me say a few words about loss of appetite, a grievous complaint in the opinion of many people, who will tell you with dismay and astonishment that they have ceased to enjoy their food. They never feel hungry and never eat with appetite. Sometimes this lack of inclination for food is due to the circumstance that the complainants ordinarily eat too frequently, and, perhaps, also eat too much. There is, however, unquestionably, a form of loss of appetite, or impaired appetite, concerning which you will be consulted.

Loss of appetite in some cases is rather advantageous and conservative. Many a man who boasts of always enjoying an excellent appetite would be more fortunate if he lost it time and again. It is, in truth, a misfortune to have too good an appetite, unless you have great self-command; for the temptation to satisfy it is considerable, particularly in the case of those who are well off, and are obliged, owing to their social position, to keep good cooks. Many such persons are doomed to suffer, as they get older, from having eaten too much at an earlier period of life. He who wants to keep himself in a state of health must learn to care little about eating, and must not only sit down to his meals with an appetite, but will take care that he leaves off before he is satisfied.

Loss of appetite very frequently depends upon a state of the mucous membrane of the stomach approaching to inflammation. After chronic inflammation has existed for a considerable time, degeneration of the gastric glands and other tissues takes place,* and, just as occurs sometimes in old age and after prolonged exhausting diseases, digestion becomes permanently weak, and in many such cases there is loss of appetite. In treating many of these cases it is necessary to help digestion artificially. But in persons whose stomach is fairly healthy you will observe that anything which induces a state of the system in which the nerves become weak, great fatigue, over-much brain work, anxiety, mental emotions, fear, or joy may give rise to impaired appetite.

In cases in which the loss of appetite depends merely upon some temporary derangement of the mucous membrane of the stomach, many of the remedies useful in weak digestion will afford relief. Very often a change of diet for a few days will effect a cure. Advise the patient to take nothing but Milk and Beef-Tea, with a little stale Bread, or Corn Flour or Lentil Flour properly

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*The Curative System, which has been recently brought into successful use through the efforts of G. W. Holman, M.D., of New York, is one that has proved itself to be of especial advantage to persons thus debilitated and unable to take medicines in the ordinary way. By ABSORPTION—well known to be one of the fundamental principles of animal life—Dr. Holman has been thoroughly successful in eradicating disease without disturbing the stomach by the action of drugs administered by the mouth. A wonderful boon to many a poor mortal whose internal economy has been teased and fretted by purgative and other irritating medicines, or who, perhaps, has never had other than a weak and delicate stomach.

During the years since 1874 we have carefully observed the very great relief afforded to many persons who were sufferers from Chronic Liver and Stomach diseases, from Catarrh of the Head or Stomach, or other inflammations of the mucous membrane, and also many who were suffering from Malarial effects, with Enlarged Spleen, and Chills and Fever, Intermittent Fevers, etc., and others with Kidney troubles, and have known a large proportion of them to be restored to health by the use of HOLMAN'S PADS. We, therefore, feel it to be both a pleasure and a duty to state the fact.

Medical practitioners, in days when what was known then as *Peruvian Bark*, and used, after being ground, in its crude state, often *applied to young children cushions containing the bark* instead of dosing with it by the mouth. And we can see no good reason why the absorbents on the surface of the body may not, in these days, be relied upon, in the like manner, to do good service, and especially if thus some of our free and soiled citizens can be induced to assist Dame Nature by previously cleansing the surface of their bodies with free applications of soap and water.

cooked. But where the loss of appetite depends upon undue wear and tear of the nervous system, and is associated with mental depression, general weakness, inability to exert body or mind, a thorough change is required—a complete alteration in the general habits of life, an abandonment for a time of the general daily routine, whatever it may be. Some of the cases in which the appetite becomes gradually reduced or completely lost are very curious and difficult to relieve. They occur commonly in the so-called hysterical Diathesis. In many instances there certainly is no structural alteration either in the stomach or in any part of the nervous system. The affection is, no doubt, due to some deranged nerve action, which lasts for a time and then passes off without leaving any actual lesion. Hysterical (ὑστέρα, the uterus, because the condition is often associated with uterine derangement) girls and women are very apt to lose their appetite for a time. At first, having little desire to eat, they yield to the impulse and gradually bring themselves to refuse all ordinary food. If pampered and pitied, and regarded as interesting objects, they become worse, and soon glory in refusing to eat. Occasionally we do meet with people in a state almost of starvation in consequence of having given way to this feeling of want of appetite. From there being no desire for food there is soon acquired an actual distaste, dislike, aversion. People often tell us that the mere smell of food at once causes all desire for it to disappear. There may be danger of actual starvation if the patient is not managed with judgment; but in such cases, when a fatal result occurs, death more commonly depends, not upon actual inanition, but upon the development of some intercurrent malady when the body is in an excessively weak and exhausted state.

Some of those remarkable "fasting" celebrities have commenced by degrees, as above suggested. The fasting tendency has developed itself after loss of appetite, occasioned by a weak state of the digestive process, due to imperfect action of the secreting glands of the mucous membrane of the stomach, or of the nerves which excite these glands to form and discharge their secretion, and which has existed for some time. Fasting becomes a passion. The patients are pitied and patronized by the people about them, who humor them in every conceivable way, and encourage them in the belief that they are peculiar beings, who, unlike common folk, can actually live without eating. This gradually leads on to deceiving. They systematically refuse anything that is brought to them, and are soon looked upon as mysterious persons. Most of them surreptitiously obtain a little, and in this way may live in a weak, emaciated state for a great length of time. They lose weight very slowly, and then become stationary, which fact of itself is proof that nourishment is somehow introduced into the body. An excellent account of one of the most remarkable of these cases, together with much matter of importance in connection with the general subject of starvation, has been published by Dr. Robert Fowler, who investigated the evidence in the most thorough manner. I strongly recommend all who are interested in the physiological, moral, and legal aspects of fasting cases, to study "A Complete History of the Case of the Welsh Fasting Girl (Sarah Jacob), with Comments thereon; and Observations on Death from Starvation," by Robert Fowler, M.D.

Colds—The Throat and Mucous Membrane.—If the throat is perfectly healthy, the process of swallowing, or deglutition, is easily performed, and almost unconsciously—at least without any great effort; but if the throat is sore, deglutition becomes difficult, and you have to make a very decided effort, perhaps more than one, before the morsel of food can be successfully swallowed.

By the alteration in the sensibility of the mucous membrane in sore throat,

important changes take place in connection with reflex nervo-muscular action. If the fauces be tickled ever so slightly, convulsive movements of swallowing will instantly follow, if the mucous membrane be in a healthy state. In slight sore throat it will be found that the response to slight irritation is slow and imperfect, while in severe forms of inflammation no efforts of deglutition can be excited even by severe irritation. The changes in question are due to an alteration in the sensitiveness of the mucous membrane, and probably are caused by pressure or stretching of the delicate nerve-fibres.

I will now direct attention to an important principle connected with the treatment of disease—a principle which has been acted upon for years, or even centuries. When a cold is coming on, you feel great discomfort about the nose, the mucous membrane of which cavity is so swollen that the nasal passages are obstructed, so that if you try to force air down one nostril, you fail, or only a little air can be forced through if a great effort be made. You are obliged under these circumstances to breathe entirely through the mouth. The discomfort caused by the swollen state of the mucous membrane may be ameliorated in a very short period of time and in a very simple way. Let the feet be put into water, as hot as you can bear it without severe pain. In the course of a quarter of an hour the disagreeable feeling of fulness and obstruction in the nose will cease. The air will pass through the passages of the nose quite freely. By increasing the flow of blood in the vessels of the skin of the lower extremities, much of the circulating fluid will be di verted for the time from the mucous membrane of the nose. . . . When sore throat attacks persons who have for some time been in a low state of health, or exposed to adverse influences, it is most important to apply substances to the surface of the throat which have the effect of completely changing the organic matters and destroying the infecting material likely to have given the trouble.

If Diphtheria exist in the neighborhood, persons in a low state of health, and those already suffering from sore throat, are very likely to take the disease, which sometimes runs it course so very quickly that life is in jeopardy in a few hours after the malady has declared itself, even before the formation of a false membrane, or the development of any characteristic phenomena of the disease. It is, therefore, of the utmost consequence to carefully watch cases of sore throat, especially when of an epidemic character. You should give Quinine and stimulants early instead of waiting until the patient is very low. In some cases of severe sore throat, as well as in Diphtheria, you will be surprised to find that persons may take in twenty-four hours from ten to thirty grains of Quinine, and eight or ten ounces of Brandy, divided into doses given every two hours, without any indication of the quantity of either remedy being excessive; and it may be necessary to continue this treatment for many days, giving at the same time plenty of Beef-Tea or Milk.

Some persons say that their throat always feels rough and uncomfortable. Many local applications are of use. You may employ a mixture of solution of Perchloride of Iron, Liquor Ferri Perchloridi, and an equal quantity of Glycerine. This mixture is very valuable in the treatment of sore throat, whether it be mild or severe. The Glycerine causes the Perchloride of Iron to adhere to the surface for a little time, and in that way increases its beneficial effects. In forms of sore throat in which there is a quantity of viscid mucus, accompanied with excoriations or ulcers on the palate or tonsils, the mixture may be applied every two hours, or oftener. The solution is a potent antiseptic, and destroys any deleterious properties the secretions may possess.

Mucous Membrane of the Stomach and Intestinal Canal.—The mucous membrane of the stomach is very liable to congestion and inflammation, much more so than is generally supposed. From time to time these patho-

logical changes probably affect small patches of mucous membrane, last for a time, and then pass off if the mucous membrane is soothed and allowed to rest from active work for a few days.

The state of mucous membrane to which I allude is not so serious as ulcer, but it is much more common, and, if not relieved, may be succeeded by the formation of an ulcer. The mucous membrane of the stomach, like the nasal and bronchial mucous membrane, "takes cold." It becomes red and less moist than in the normal state. There is often great discomfort and very frequently severe pain. The glands are more or less affected, and the functions of the stomach are very seriously disturbed. The secretion of gastric juice is interfered with and its qualities changed. Digestion is of course deranged, and sometimes completely checked. There may be much flatulence, which adds to the distress. Many patients, instead of allowing the stomach to rest for a while, are too prone to call for food when they experience any uneasiness. They feel exhausted, and think a good meat meal will certainly relieve their discomfort. This they take, and very soon find they have made a mistake, for their pain is increased. If they are fortunate, vomiting will be excited, and all that has been taken, with perhaps other matters already in the stomach, will be rejected, when considerable relief will be experienced. When you have reason to think that a person is suffering from this slight inflammation, it is desirable to at once carry out measures for his relief, and effect a return to the healthy state, for the stomach is an organ whose work cannot be suspended for long at a time without the whole organism suffering. Order, therefore, nutritious, but unirritating, soft, or liquid food, and then take care that for the next few weeks only food of a soothing character, which will be very easily digested, passes into the stomach. On no account allow ordinary diet, and do not touch beer, and take no very cold or very hot liquids of any kind. Every form of alcohol should, as a general rule, be withheld. You may order Bread and Milk, or Arrowroot and Milk, or Rice, Sago, Tapioca, Maccaroni, Vermicelli, and cooked in such a manner as to make a very soft, moist food. By adopting this course, something like a poultice is applied to the disturbed mucous membrane of the stomach, and in many other cases with great and immediate benefit. It does no one any harm to live on soft food of a farinaceous kind for a few days or a week. Indeed, not a few would gain in health if they systematically adopted such a diet for a week or two once in every two or three months. A very good substance to recommend to be eaten under these circumstances is Lentil Flour, well boiled and made thick, like gruel.

Any part of the mucous membrane of the small or large intestine may be affected by congestion and catarrhal inflammation. There are many cases in which there is severe pain "in the stomach," as the patient says, but which depends upon derangement of some part of the small or large intestine. The mucous membrane may be congested in patches, and the action of the follicles and of the villi for a time becomes seriously disturbed. By taking care that only bland substances, and as little as possible of these, pass along the small intestine for a time, the mucous membrane will be soon restored to its normal state. It is important to check such disturbances as soon as possible. Though, according to the person himself, he may be suffering only from pain "in the stomach,"—if he do not take complete rest, what is only a slight ailment may soon become a grave malady. In such cases, diet is of more consequence than medicine; but if the pain is very severe, it may be necessary to give small doses of sedatives. Advantage also results from employing mild counter-irritants over the belly. The best counter-irritant is a poultice made of half Mustard and half Linseed-meal.

This may be applied to the surface, near the seat of pain, and it unquestionably relieves the inflammation. A mustard-leaf is more easily prepared, but a piece of writing-paper should intervene between it and the skin, or the action will be too strong, and the patient will remove it before there has been time for the counter-irritant to have done good.

The external application of warmth greatly relieves pain, which results from a congested or inflamed state of the mucous membrane of the intestinal canal. A Flaxseed-meal poultice, or flannels wrung out in hot water, will be of service. If, however, this does not soon afford relief, the surface of the poultice or the flannel may be sprinkled with Turpentine. The thick India-rubber bottle for hot water should find a place in every traveller's trunk. It is most useful in the treatment of abdominal and other pain.

Stimulating liniments are, as a general rule, not advisable. You do not want to move the bowels about in the least degree, or to disturb the parts at all. This rubbing in of liniments is often adopted most injudiciously. Many nurses, and ladies having a turn for doctoring, require to be cautioned on this head, for many conditions are made worse by rubbing, and in some instances very serious inflammation may be excited by the operation.

Congestion and inflammation of a portion of the mucous membrane of the large bowel is not uncommon. There is in such cases severe pain, and the action of the bowel is much deranged. The condition may pass on to ulceration, which may endanger life. Ulcers frequently form in the lower part of the small intestines in cases of Typhoid Fever, the healing of which is always a very slow process. Every case of Typhoid Fever requires the most careful management and constant attention, not only at the time ulcers are forming and the sloughs separating, but during the healing process. Though this disease cannot be included among slight ailments, it is very desirable that you should know that health is only very slowly restored, and that three months sometimes pass before a patient suffering from Typhoid can with safety be allowed to resume his usual diet and habits of life. All attempts to hasten convalescence are unwise, and every now and then a patient is lost in consequence. Full time must always be allowed for the healing of ulcers in any part of the alimentary canal.

Nerves of the Intestine.—The bowels in every part are very freely supplied with nerve-fibres, and so long as the functions are properly discharged we remain quite unconscious of the existence of any exquisitely sensitive tissues in connection with the alimentary canal. Fortunate are all who pass through life without discovering that sensitive nerves are distributed to the intestines. We know nothing of the changes taking place in the stomach and bowels until something interferes with their due performance. Then indeed we become aware of the contrast between ease and certain forms of dis-ease as it affects these wonderful structures.

The whole of the intestinal tissues are most abundantly supplied with nerves. In some of the older anatomical books, descriptions are given which would give you a very imperfect notion either of the number or arrangement of the nerve-fibres. In fact, the most important and most extensive portion of these nerve-fibres is known to few anatomists even now, and only a few years ago it would have been impossible to form a conception of the true arrangement of the nerve-fibres of the digestive tract, or of the actual phenomena going on during life in any part of it. All the tissues entering into the formation of every part of the intestinal canal are most abundantly supplied with very fine nerve-fibres, although you might read much that would lead you to infer that the mucous membrane and muscular coat of the stomach and intestines received very few nerves. It used to be supposed that the contraction of involuntary muscular tissue resulted from direct irri-

tation or stimulation. And even now little attention is given to the highly important part played by the nerves and nerve-centres which influence every action and every movement connected with every part of the digestive process. In every part of the digestive apparatus, from the mouth to the anus, the secreting and absorbing as well as the muscular apparatus receives an abundant supply of nerve-fibres.

The muscular fibres which are distributed around the stomach and intestine, as well as those situated just beneath the mucous membrane, are frequently, though not constantly, in active movement, each fibre alternately shortening and lengthening—undergoing contraction and relaxation—actions which occur at different times in different parts of the alimentary canal, and in all alternate, probably, with comparatively long periods of rest or quiescence. But invariably the contraction of the muscular tissue, like that of every form of voluntary and involuntary muscle, takes place under the influence of the nerves.

Besides the nerves distributed in networks and plexuses to the mucous membrane and muscles in great number, there is a highly complex system of ganglia or nerve-centres little appreciated, and indeed hardly known to more than a few observers. You know, of course, what multitudes of ganglia help to constitute the sympathetic system. Many of the large ones you can see in the course of your investigations. You also are aware of the complex interlacement of coarse nerve-fibres and trunks in many parts of the abdominal sympathetic system, but you can form but a very imperfect idea of the vast number of minute ganglia and ganglion cells connected with what seem to be excessively fine nerve-threads. . . .

If you examine a specimen under an inch object-glass, you will have no difficulty in demonstrating a vast network of ganglia and nerve-fibres. You will observe hundreds of little microscopic ganglia on different planes, and these you will discover are all connected with one another by numerous intercommunicating bundles of nerve-fibres, constituting quite a network or plexus of fibres and ganglia. The ganglia in question were discovered some years ago by Meissner; Auerbach had some years previously described plexuses and ganglia close to the muscular coat. But these observations were contradicted by some and ignored by others, and long papers were written by great authorities to prove that the nerves, ganglia, and plexuses were really vessels, the points of divergence of which, in their opinion, had been mistaken for ganglia. There is, however, no difficulty in demonstrating these ganglia most conclusively. I have many times shown in connection with the course of physiological anatomy which I used to give in this college, the cells composing them, with the bioplasm of the nerve-cells and fibres artificially stained with carmine, and I can assure you, with the greatest confidence, that the cells are true nerve-cells, and that fine nerve-fibres pass from them to supply with nerve-fibres the tissues of the mucous membrane, as well as the thick layers of muscular tissue which encircle the intestinal canal. So numerous are the fine nerve-fibres that there is not a portion of tissue the one five-hundredth of an inch in width which does not receive an abundant supply.

Every villus of the intestinal canal is supplied with nerve-fibres, and the action of each of its several component tissues is presided over by nerve-cells. Every gastric gland, as well as every intestinal follicle, is also abundantly supplied. Its structural connection with the nerve-fibres is a nerve-centre, or rather a group of ganglia by which nerve action is regulated, the changes resulting in the secretion of gastric juice and intestinal fluid governed, and actions emanating from other nerve-centres or groups harmonized. The nerves have also much to do with the simultaneous discharge of the secretion

upon the surface of the mucous membrane from thousands of microscopic glands.

But in spite of this marvellous nerve supply, as long as things go on rightly, one is not cognizant of any of the changes which are taking place. The intestinal tube is sometimes full and distended, sometimes relaxed, sometimes contracted, and yet all these alterations in volume, all this stretching and contraction, take place for the most part without our knowing anything about it. If, however, these same phenomena occur in an exaggerated way, or if anything interferes with their due performance, one soon becomes conscious that things are not as they should be. We cannot always say exactly what part of the intestine is at fault, or what sets of ganglia are disturbed in their action, but we experience discomfort, if not actual pain, and almost instinctively so act as to give the whole digestive system little to do. We let it rest for a time. We take no food, or confine ourselves to small quantities of easily digested slops, and in the course of a short time things generally right themselves.

But surely it is very remarkable, seeing how unconscious we are in the healthy state, at least as far as feeling is concerned, of the existence of the intestinal canal, that when its action is much deranged, the pain experienced should be so very severe, and so difficult to bear, as is the particular pain which is developed at the peripheral distribution of the sympathetic nerve-fibres, the ordinary actions of which go on quietly and almost incessantly, but quite unconsciously.

The peritoneum (περί, around, and τείνω, to extend) or thin membrane external to the muscular coat of the intestine, which is supplied with nerves from these same ganglia, and which in the healthy state is always sliding smoothly in contact with the moistened surface of another layer of the same delicate tissue, becomes exquisitely sensitive in inflammation. The pain of *Peritonitis* (περί, around, τεινω, to extend, and ιτης, rash, the suffix *itis* denoting inflammation) is one of the most terrible forms of pain that any human being can have to bear, and yet these same nerve-fibres which are concerned in the causation of most horrible suffering, act as a general rule quite unconsciously, do their work without our knowing anything of them, or of the action of the apparatus they govern.

Gastrodynia.—If the vessels of even a small part of the mucous membrane of the stomach become unduly distended from any cause, discomfort results. If there is too much action of the glands, or insufficient action, pain in the stomach, learnedly called Gastrodynia (γαστήρ, the stomach, and ὀδύνη, pain), or Gastralgia (ἄλγος, pain), is occasioned.

If the food we take does not digest, that is, if it does not gradually dissolve after it reaches the stomach, as it should do, but remains there, being moved round and round by the muscular action of the organ, we experience pain—and sometimes extreme pain. If you take rich, improper food, and drink a quantity of bad champagne, more especially if your dinner comprises tough beef and concludes with a good supply of heavy pudding or pastry, you will probably learn what is meant by an attack of Gastrodynia, unless you happen to have an unusually vigorous digestion. You will at the same time be thoroughly convinced of the existence of a vast number of extremely sensitive nerves in connection with the walls of your stomach. Not only so, but in all probability the action of the whole intestinal canal will soon be violently disturbed, and you will be fortunate if you get off with a sharp attack of vomiting and active diarrhœa; for in this way you may perhaps find a short cut to returning health. But thousands who eat moderately, and some even who eat immoderately, go on from year to year without the

slightest discomfort of any kind in any part of the intestinal canal, and without discovering from any sensations that they possess one.

Indigestion may be due to altered gastric juice, or to the secretion being too acid or not sufficiently acid; or the active dissolving substance, the pepsin, may be in sufficient quantity or imperfectly formed; or, the derangement may depend upon the pouring into the stomach of a considerable quantity of alkaline fluid, which probably neutralizes the action of the gastric juice, and in other ways impedes digestion and interferes with the changes taking place in the stomach. Strange to say, two fluids of opposite qualities are secreted by glands in different parts of the stomach.

Waterbrash is often difficult to cure. The diet must be carefully regulated, so that the work of the stomach may be uniformly the same for each meal. Purgatives, and especially preparations of rhubarb, are often useful. Bitter infusions, particularly Calumba, have been given with advantage. Valerian, Assafœtida, and Galbanum are in the catalogue of medicines that may be prescribed.

In cases of persistent Heartburn and Indigestion, too much food has been taken and has been allowed to accumulate in the stomach. In the management of these cases an almost forgotten proceeding is obviously the right one. First, clear out the stomach. Give an emetic. Vomiting is the natural way of curing many cases where a quantity of unusual organic acids is formed.

MANAGEMENT OF THE FEET.

THE relations of the Feet to the Body are such that the health of distant organs, and in fact of the entire system, is very liable to be affected by the treatment they receive. All know this, or ought to know it, yet civilized people, to a very great extent, neglect, or abuse their Feet more than almost any other part of their bodies. In view of these facts, a few plain suggestions concerning their proper management will not be out of place.

The feet should be thoroughly bathed every night, and it would be well to repeat the bath in the morning. The water used for bathing may be cold or tepid; though for most persons, in ordinary health, the Cold Foot Bath is preferable, because its use will be followed by prompt reaction, which is very agreeable and conduces to fortify the system against "taking cold." The severest cold may often be promptly cured by this measure alone. Even where Warm Water, with Soap, is used for cleansing the Feet, it is well to follow it by a dash of Cold Water, and then by brisk friction with a brush or coarse towel. Salt and Water may often be used with much advantage, especially after long walking. For fetid perspiration of the Feet, use one or two tablespoonfuls of Ammonia in a quart of Water or a strong solution of common Soda, as a bath, frequently. Where a genial glow of warmth does not promptly follow the Bath and Friction, in any case, a little Bay Rum, Whisky, or Cologne Water,

should be applied, and the friction continued until the effect is produced.

The toe-nails should be frequently pared, but not so short as to leave a portion of the end of the toes uncovered. All collections of filth beneath and around the nails should be removed at the time of bathing. As much care should be taken with the Feet as with the Hands, for cleanliness is to be observed, not merely for appearance, but as an indispensable prerequisite to health and comfort.

The clothing of the Feet should be adapted to the season and the weather. In summer, cotton or linen stockings may be worn ; though silk, or fine lamb's wool, are as cool, and less likely to chafe the Feet. They should be frequently changed, as often at least as the shirt, for the Feet are subject to more rapid accumulation of cutaneous excretions than any other portion of the body.

The boots or shoes should fit closely at the instep, to prevent slipping up and down at the heel, but there should be room enough forward to save the joints from hard pressure, and the toes from being crowded one upon another. Disregard of this rule, under the influence of Fashion, or a perverted taste, is the prolific cause of Corns, Bunions, In-growth of the Nails, and other deformities and diseases. The soles of boots or shoes ought to be a little broader than the Feet; and those used out of doors should be of such thickness as not to yield readily to inequalities of the ground, nor permit cold or moisture to strike through to the Feet. Females too generally violate the dictates of common sense in this respect, and thin soles have sent thousands of them to premature graves. The interposition of in-soles, made of felt, or cork, affords much protection, where the Feet are habitually exposed to a cold or moist surface ; but water-proof overshoes, except for a short time, are injurious. They prevent evaporation of moisture thrown out from the skin, and, if worn long at a time, cause the stockings to become damp even in dry weather, and they rapidly destroy the durability of the leather over which they are worn.

Persons who spend the day with their Feet in snow or water, should remove the wet clothing from them on coming in at night, bathe and rub them well, and put on dry stockings and shoes. Such persons should also, if practicable, have two pairs of boots or shoes made just alike, to be worn on alternate days, for then they will have a dry pair to put on in the morning without drying them so quickly as to injure the leather. Tanners' Dubbing ought to be applied to the leather every time it becomes thoroughly wet, and that while it is yet damp. This will keep it soft and easy for the Feet, and add greatly to its durability. Castor oil answers the same end.

When the Feet are very cold, it is much better to warm them gradually by friction and gentle heat, than to expose them at once to a hot fire. If they are frozen, they should be wrapped in snow or immersed in very cold water, in order to permit the thawing process to be produced gradually by the warmth of the blood within the body, rather than by external heat. This will be security against loss of the part by Sloughing, and also against Chilblains. Acting on this principle, the surgeon is able to freeze a part, operate upon it, and then thaw it, without leaving behind any bad effects of the frost.

To sum up all, briefly: Let common sense govern in the management of the Feet, and although proper care of them does involve some daily effort (a strong argument with lazy people), let it be borne in mind that when disease comes, it requires treatment, brings pain, and often causes partial or total loss of the use of the Feet. In this case, emphatically, "an ounce of prevention is better than a pound of cure."

HUMAN HAIR.

NOTHING that the Creator has made can be unworthy of our investigation. Every object presents a germ of boundless knowledge to the thoughtful and inquiring mind. Even a single Hair, when carefully examined, displays the greatness of His power and the wisdom of His works. The anatomist sees, in the construction of a Hair, a beautiful, economical, and mechanical contrivance. Taking the human Hair, for example, he observes first, that, as an appendage to the skin, it partially participates in its organization.

The skin is composed of three layers. The first, or external, of which is called the cuticle or scarf-skin, which is transparent and abundantly porous; the second, rete mucosum, or a thick, mucous, cellular membrane, containing in its cells the coloring matter, which, seen through the cuticle, constitutes the color of the skin; and the third, or lowest of the series, the cutis — it is from this that the Hair springs.

Every Hair originates in a bulb, seated within the skin, which, in one newly pulled, may be seen with the naked eye. In its passage through the skin, it pierces the layers in an oblique direction, and thus assists in binding them together. Each Hair is composed of two parts — an external tube, and an internal pith. The former of these resembles the cuticle in its nature and chemical properties, and, like

it, is of a white color, whatever may be the color of the Hair itself. The central portion, or pith, is that which gives to the Hair its peculiar color. It is composed of extremely delicate vessels, containing a peculiar colored fluid. In this respect it exactly resembles the mode in which the skin itself is colored. Indeed it would appear that the tube of the Hair is composed of condensed cuticle, and the pith a modification of the rete mucosum.

Each Hair is accompanied by a nerve and bloodvessels, from the latter of which the matter for the growth of the new Hair is continually deposited. In old persons, when the nervous power begins to lose its accustomed energy, the coloring matter of the Hair ceases to be secreted, and the cellular pith which contained it shrivelled up, and is sometimes totally absorbed. The tube of the Hair is then seen of a transparent whiteness.

A gray head is sometimes the result of sudden terror, or grief; besides, many diseased actions of the skin will produce the same effect. In the case of terror, or grief, it is supposed that the nerve at the root of the Hair suffers a paralysis, which stops any further deposition of the coloring matter.

To the chemist, a Hair offers an interesting analysis. It has been found by Vauquelin that black Hair is composed, first, of a considerable quantity of animal matter; second, a small portion of white, thick oil; third, another oil, of a greenish color, in greater quantity than the other; fourth, of iron — that the form under which it exists is unknown; fifth, a few particles of oxyde of magnesia; sixth, the phosphate of lime; seventh, carbonate of lime, small quantity; eighth, silex, or flint, in large quantities; ninth, and lastly, a considerable portion of sulphur.

To the inquirer in Natural Theology, who looks abroad into the wide and instructive field which Natural Philosophy presents, to objects demonstrative of the design and wisdom of the Creator, perhaps nothing is better adapted to his laudable purpose than the study of the organization and structure of this minute portion of the animal frame. He admires that infinite power of combination which, from three primitive colors, has tinted the hair of millions of different species of living creatures, each one with a color distinct and peculiar to itself. The individuality of thousands of genera is thus preserved, which, without it, would have been a scene of monotonous and inextricable confusion. Thus captivated, he looks more closely, and from a general survey proceeds to a particular examination, and new themes for admiration stimulate his industry. He notices the exquisite adaptation of Hair to the wants of the creature — the silken hair of the mole, the quills of the porcupine, the mane of the lion, the

wool of the Merino and Cashmere sheep — all these he studies, and asks himself, "Whence this interesting variety?" He takes a step further, and observes the difference of Hair on different parts of the same body — as, for instance, those of the mane, fetlocks, and tail of a horse — and finds, in every case, that Infinite Wisdom and Power have been engaged in providing different peculiarities for all those contingencies which would otherwise destroy the happiness of the beings to whom they are now a source of comfort and protection. He is particularly struck with the non-conducting power of Hair to heat; for it is by this that Hair is so admirably adapted for the winter clothing of animals. Enveloped in Hair, the heat of the body is effectually preserved from dissipation. It is shut in with all that certainty which, in the winter season, our furred coats and double blankets so comfortably demonstrate. Again, he is charmed with the flexibility of the Hair; in no way impeding the motions of those animals which it clothes; its strength, by which it is cleansed without the slightest fracture; its insensibility to pain; for had it been of a very sensitive nature, it must, from its exposed situation, have been a source of continual pain to the animal.

Hair is of a vegetative nature; hence it grows long after death. Instances are on record, in which coffins, after having been long buried, have been found full of Hair, the growth of their dead inhabitants.

If the Hair falls off the head at an early age, it is evident that some constitutional disease exists, and not unfrequently produced by excessive action of the brain, as Intense Study, great Anxiety of the Mind, Afflictions, Grief, Suppressed Evacuations, Determinations to the Head, Unnatural Heat or Inflammation, Fevers, Dyspepsia, etc.; for there is great sympathy between the stomach and the brain, as we well know, by the Hair falling off after severe Illness, Fevers, etc.

Treatment.— The Hair, if properly preserved, is one of the most beautiful ornaments among Nature's gifts, and may be retained by care and cleanliness, with soft and graceful beauty, to a very advanced age. To retain or restore the Hair requires much attention, and it is often owing to neglect that the Hair falls off. In all cases, the head should be thoroughly washed, and the scalp kept as thoroughly clean as any part of the body.

Most of the evils result from a want of proper washing and purifying the roots of the Hair, with Warm Water and Castile Soap in cold weather, and Cold Water during warm weather, after which comb and rub well with a coarse towel, or hair-brush, so as to restore a healthy action to the scalp, and remove the scales or scurf which prevents or suppresses the perspiration. When perfectly dry, use the

small-tooth comb, which will remove the impurities and produce a glossy and silky appearance. The Hair requires pure air as much as the lungs, and the roots require washing and cleansing, thereby giving life and elasticity to each Hair.

The Marrow of beef, fried down and perfumed, will be found of great benefit to the Hair. Brandy poured upon the Sulphate of Copper, and allowed to remain a few days, by rubbing the head with it, will cause the Hair to grow in bald places.

The Hair Dye, which is sold at the druggists for coloring the Hair, should be used with great caution, as many serious results have occurred from its use. The *Home Journal* states several remarkable cases of persons becoming insane or sinking into Idiocy, by the habitual use of Hair Dye; the Nitric Acid of the dye having poisoned the minute capillary cellules. Mademoiselle Mars, the great actress who charmed Napoleon Bonaparte, is represented as having been one of the known victims.

The quantity and color of the Hair are always in relation with the constitution of the individual to which it belongs, and is one of the characteristic signs of temperament. The maintenance of the vigorous growth, fineness, and glossiness of the Hair, depends on the healthy state of the body in general, and that of the skin in particular. After an attack of Fever, or of any violent disease, the Hair falls off in great quantity, and is sometimes long in being reproduced in its pristine abundance. In languid states of the system, of long duration, caused or kept up by weak digestion, associated with cold extremities, and a dry, rough skin, the Hair is of feeble growth, and comes away readily with the customary combing and brushing. Whatever causes diminish the activity of the powers of life, whether physical or moral excesses of any kind, late hours, privation of sleep, anxiety and grief will all have a prejudicial effect on the Hair. Sometimes, under the operation of one or other of these agents, it becomes prematurely gray, as happened, in the course of a single night, to the unfortunate Marie Antoinette, Queen of France.

RAINFALLS, HOUSES, AND SEWER-GAS.

IF the public generally understood that the effects of heavy rainfalls was to choke up the sewers and force the poisonous gases they contain back into the houses people would not be in such a hurry to close up every door and window at the first indication of a shower. They would rather only close such openings through which the rain might beat, while throwing wide open every other aperture by which foul air might escape and fresh air could enter. A writer in the London *Sanitary Record* points out that when heavy showers occur in cities in which the sewers are unventilated the torrents of storm water entering the sewers so raise the level of their fluid contents as to compress the confined sewer-gas, and consequently the poisonous air escapes in part through the ordinary water-seal traps, forcing the closet-trap and finding its way into the house. In the midst of the season of great heat and sudden thunderstorms, the water rushes into the sewers in torrents, with the result above alluded to. The first

thing a careful housekeeper does when she hears the premonitory rumbling of a thunder shower is to close every door and window in her house. The effect is plain. Every person has experienced it. The outside atmosphere is purified by the disturbance of the oxygen, of which it is partly composed, until one can actually smell and taste its sweetness. The air inside is defiled by its own staleness and the added gas forced back through the drainage pipes until one can smell and taste its pollution. At the first intimation of a heavy rainstorm the rule should be to only close such windows as are absolutely necessary to keep out the water, and to open wide all others to get the benefit of the storm-freshened air.

THE SOLITARY VICE—SELF-ABUSE.

THERE is a vicious, degrading, and most destructive habit, destructive to both body and mind, indulged in frequently by young people, of both sexes, but mostly by males, which ought to be without a name. It is by medical writers called Onanism and Masturbation—the former as applied to males, and the latter as applied to females; but it should properly be styled the *Solitary Vice*, a vice of the most ruinous kind, and indulged in almost exclusively when the deluded victim to the habit is "solitary and alone." No further description need be given of it here, for it is presumed that every one who *ought* to understand what is meant, will readily be able to do so. The only object in alluding to the subject, in a work of this kind, is to put parents, and those who have the care of children, on their guard.

The vice is more common than is generally imagined, and it is as destructive as it is common. This single pernicious habit of Self-pollution, by the youth of our country, is the direct cause of more physical and mental debility, the destruction of more constitutions, the ruin of more minds, and the source of more wretchedness and misery, than any other one cause. It tends directly to weaken and destroy the force and energy of the physical system, and to impair the intellect, weaken the memory, and debase the mind; resulting often in early decrepitude, permanent nervous affections, amaurosis and blindness, fatuity, and insanity. It is worse than intemperance, worse than open lewdness, worse than all other vices, in which young or old ever do or ever can indulge; more destructive to all the best interests of humanity, in this world and the world to come; destructive to body, mind, and soul, and will, if persisted in, render existence a burden, a blank waste, and life a continued scene of wretchedness!

Parents especially, therefore, should be on their guard, to save their children from this monstrous and ruinous evil. The habit is one which is generally acquired in early life, if at all, about the time of puberty, or from twelve to sixteen. It is often acquired or first learned at school, and is taught or communicated from the older to the younger—from the guilty to the innocent. The young know not the sin, nor the evil consequences of the vice. They must be watched. Parents should note well their movements, and look closely for the symptoms. They can easily be detected. The greatest trouble is, that when parents suspect, or even know, their children are guilty of the vice, they will not, from delicacy, diffidence, or indifference, admonish or instruct them, nor take measures to break up and cure the habit. Parents are often more to blame than children for the ruin which this dreadful vice entails; for it might be prevented or broken up in its early stages, with proper and timely instruction and management; whereas, if once firmly established by long indulgence, it is almost beyond all hope of remedy.

It is, as I have said, the Solitary Vice; hence, persons who indulge in it will be disposed to solitude, and inclined to shun company and society. They will frequently be alone, and missed from the company of the family, or others with whom they are associated, which is one of the *first symptoms*. It is the most common and most unerring symptom or evidence. The victim, as the habit advances, becomes timid and bashful, and shuns the company of the opposite sex, which is another reliable symptom. The face is apt to be pale, and often a bluish or purplish spot or streak under the eyes; while the eyes themselves look dull and languid, and the edges of the eyelids often become red and sore, or inflamed. The person can not look you steadily in the face, but will drop the eyes, or turn away from your steady look, as if guilty of something mean, which is another pretty reliable corroborative evidence.

There are various other evidences of the vice, which may readily be detected by any one who is at all expert in such things, or who has read a little on the subject. The health, for instance, soon becomes impaired; there will be general debility, a slowness of growth, weakness in the lower limbs, nervousness and unsteadiness of the hands, loss of memory, forgetfulness and inability to study or learn, a restless disposition, weak eyes and loss of sight, headache, and inability to sleep, or wakefulness. Next comes Sore Eyes, Blindness, Stupidity, Consumption, Spinal Affection, Emaciation, Involuntary Seminal Emissions, Loss of all Energy or Spirit, Insanity, and Idiocy—the hopeless ruin of both body and mind! These latter results do not always follow: nor even in a majority of cases. Yet

they, or some of them, do often occur as the direct consequences of the pernicious habit; while in all cases, and in proportion to the extent of the indulgence, the general health is affected, and the mind more or less injured. On feeble constitutions the effects of the vice are more marked, and the breaking down and ruin of the general health of both body and mind occur earlier, and more rapidly, than in persons with naturally sound and robust constitutions. But no physical system, no matter how sound and robust it may be, can long withstand the vice, but must sooner or later give way and break down.

"But what is to be done?" says the anxious parent. "How am I to prevent or cure the difficulty?"

Treatment.—We answer: be on your guard; watch; look out for the "symptoms." And when you see enough to satisfy you, or even to excite suspicion, that something of the sort is going on, *take immediate measures to break it up.* It is a delicate matter for parents, especially for a father, to speak to his son about. It is different with the mother; she can more readily speak to a daughter upon subjects of that nature; and where she suspects any thing wrong of that sort with her daughter, she should. It is her bounden duty at once to speak to her about it, question her, find out the true state of the case; and, if guilty, portray to her the danger, the evil consequences, and ruin, which must result if the habit is not at once and forever abandoned. If persuasion and instruction will not do, other measures, such as will prove efficient, must be resorted to.

In case of a son, perhaps the better way will be for the services of the family physician to be engaged. If a father, or parent, suspects a son of the habit, let the fact be submitted to an influential physician, and let him take the boy in charge. There need be no delicacy or reserve on his part, and he can portray to the misguided young man the horrors and evils of the habit in their bearing, and his caution and advice will have weight.

As I have already said, the vice is a "solitary" one; it is never or rarely indulged in, except when alone; never begun after the person has arrived at mature years. Hence, if all other measures fail, there is one which does not fail, and it should be resorted to; that is, to so arrange that the person shall *never be alone*, until the habit has been entirely broken off and cured. If the youth is attending school—and that is the place (boarding schools especially) where the vice is frequently learned, and most indulged in—let him, or her, be taken from school, and be kept as much as possible in society. Resort to a change of scenery, to travel, and to new associations. If this does not prove sufficient, then arrange so that the unfortunate subject shall never be alone, neither day nor night. The remedy will be difficult, I know, but it can be done, and it is better to go to all the trouble necessary to accomplish it, rather than that the youth shall be lost and ruined. Procure a companion; one of sufficient age, intelligence, and influence, who shall understand the whole matter,

and whose business it shall be to be *always present*, so that wherever the "patient" goes, there the "companion" goes also, day and night. A few months of this kind of companionship and treatment will generally be sufficient to break up and cure the most confirmed case. But in most cases, especially if taken in time, in the early stages of the vice, and prompt, energetic, and intelligent measures are made use of, and especially if the aid of a good physician is secured, the habit can be overcome, and the youth saved, without resorting to such extreme and onerous measures as I have just indicated.

The subject is an important one, and one which should engage the serious attention of every parent. Few, perhaps, ever think, or ever know, how many of the unfortunate inmates of our lunatic asylums and insane hospitals have been sent there by this dreadful vice! Were the whole truth upon this subject known to the public, it would alarm parents, as well as the guilty victims of the vice, more even than the dread of the Cholera, Small-pox, or any other epidemic scourge to which our country is at times subject!

Parents, and indeed all, old and young, should inform themselves in regard to this matter. They will be astonished at the frightful effects produced by this "solitary vice;" at the constitutions ruined, the health destroyed, the diseases engendered, the physical energy wasted, and minds impaired or ruined; all traceable, directly or indirectly, to this one fruitful cause of misery and ruin. But in the absence of such information, we earnestly recommend all, parents especially, to confidentially consult a good, intelligent, and reliable physician upon the subject, and follow his directions in all cases where they may have need of his counsel and advice, in regard to the matter.

In properly treating a person subject to this vice, of course, it will be necessary to regulate the diet, and resort to more or less medical treatment, especially external remedies and applications. But, in these things, consult your physician; put the whole case in his hands, and follow his directions. By all means, where you suspect a young person under your care, or charge, of this ruinous habit, do not hesitate, but lay the case before a good physician at once.

GOITRE—BIG NECK.

THIS is an enlargement of the thyroid gland, which is situated in front of the neck, or windpipe. The affection is also called Bronchocele, Big Neck, and sometimes Derbyshire Neck. It only affects females — girls and women — and is not to be considered dangerous, though it is often troublesome. Sometimes it greatly disfigures the neck, on which account it is very much detested by those

who are troubled with it. There is no particular cause that can be assigned for this disease, any more than it seems to be hereditary or constitutional in some families. Its cure is very difficult, slow and tedious, and perhaps can never be entirely removed by medical treatment; though it may generally be greatly relieved.

Treatment. — The chief reliance is upon external applications, in the form of Washes and Ointments. The best for this purpose is made as follows: Take Iodide of Potassium, 1 dram; Iodine, 10 grains; Simple Cerate, or Lard, 1½ ounces; mix well into an Ointment; rub a little on the enlargement once or twice a day, and wear a flannel round the neck. The Ointment, owing to the Iodine, will color the neck for the time being, but this may be endured for the sake of the good it will do. The color will gradually disappear after ceasing to use the Ointment. It should be continued, however, for several weeks, or at least until the quantity named has been used. If it should produce excoriation or soreness of the skin, omit it for a few days. At the same time the neck should be washed once or twice a day in strong Salt Water. The patient may also take the same articles used in the Ointment, in the following way: Take Iodide of Potassa, 1 dram; add ½ ounce, or about two table-spoonfuls of Water, to dissolve it; then add to it 1 ounce of Tincture of Iodine; commence by taking ten drops of this at a dose, once a day, increasing one drop every day until you get to twenty; and then continue at that till the whole is taken. It can be taken in Sweetened Water, or any other medium desired. Small doses of Mandrake, Blood Root, and the Iris, or Blue Flag, may also be taken, once a day, sufficient only to keep the bowels slightly loose, and to act on the glandular system. They may be taken either in pills, powders, or tincture; or the Podophyllin, Sanguinin and Iridin may be used, being preferable on account of the smallness of the dose. In this case, take about half a grain of each once a day, combined with as much pulverized White Sugar.

THE TEETH—WHAT THEY SHOULD DO.

FEW people know the importance of Teeth, and still fewer take proper care of them. Only when persons grow old, and find them wanting, or when they suffer from their decay, do they properly appreciate their value. It is remarkable that, while man has only one set of any other organ, during his life-time, he has two distinct sets of Teeth, and this fact may be brought up to show their great importance in the animal economy.

Man properly has thirty-two Teeth, which are fixed with great

firmness in the jaws, which latter are moved by very powerful muscles —the upper and the lower rows of Teeth are pressed toward each other with considerable force during the mastication of food. By these means, the substances taken into the mouth are broken and macerated by the salivary juice, which flows from the glands of the mouth during the presence of food.

The subsequent digestion of food in the stomach much depends on its perfect mastication; if the Teeth have effectively done their work, and reduced the food to a soft mass, the gastric juice of the stomach more easily dissolves it, and blood is the more speedily and completely formed therefrom, and the body better nourished. Many people who have good Teeth, suffer indigestion from neglecting to properly use them; and those who have them not, are alike afflicted from their absence.

Treatment.—To preserve the Teeth, they should be regularly cleaned night and morning. Cleanliness, in this respect, much promotes personal elegance, and frees the breath from the disagreeable taint that would otherwise accompany it. The best Tooth-powder is a little pulverized Charcoal. Neglect of the Teeth is so common, and the employment of improper substances as articles of diet so general, that comparatively few people have their Teeth quite sound, and many suffer the excruciating pain termed Toothache. This pain is so severe, that we should do right to regard it as a warning to take proper care of the Teeth, which are so important to the welfare of the body. Creosote, Oil of Cloves, Alcohol, Opium, and other such substances, are often employed as remedies for the Toothache. But these only aggravate the evil, by accelerating the decay, and often disordering the gums. The wisest course is to seek prevention in cleanliness, in the manner already pointed out, and by living upon simple and pure articles of diet. But when decay has taken its seat, the best remedy is to have the apertures filled with a substance which hardens therein, and thus supplies an artificial enamel.

The manner of eating demands attention in connection with the preparation of food, for we have to consider what is to be done, before the food can be quite fit to enter the stomach. Why have we cutters and grinders in our mouths? and why does a savory morsel, or even the idea of a dainty, produce a flow of saliva when the stomach is prepared for a new supply? Evidently that food may be thoroughly chewed. Several purposes are to be answered by this process. The saliva contains ingredients of value in digestion, and a certain proportion of air is to be blended with the food. It is an important office of the saliva and other fluids generated in the mouth, to entangle the air in the act of chewing, while each morsel is to be reduced to small fragments, and be formed into a pulpy ball convenient to swallow. To gulp down a meal in a hurried manner, deprives the stomach of these advantages, and is unnatural to man, except when his appetite masters his reason. Hasty swallowing is

always attended with some violence to the nerves about the entrance to the stomach, and the habit, therefore, irritates the heart, which is apt to produce disorder of the brain. Solid substances require to be masticated, or well chewed, in order to prepare the nerves of the gullet and stomach for that consentaneous action which renders swallowing a perfectly safe, regular, and pleasant action. Besides, those who devour their food are apt to treat the stomach as if it were a dead receptacle for all they may please to drop into it, and they swallow, in their hurry, hot food which they could not hold in their mouths without pain or inconvenience. But the stomach is, in reality, more sensitive than the palate, and immediately becomes disordered, by whatever would be too hot, cold, or strong, to be comfortably detained awhile in the mouth. We should, therefore, deliberately chew our food before swallowing it, and thereby enjoy the taste and flavor of the food, or we shall be in danger not only of overloading the stomach, before the appetite is satisfied, but likewise produce Dyspepsia, and innumerable other diseases which arise from a disordered state of the stomach.

Teeth are essential to good digestion, as well as to good pronunciation, and in preventing offensive breath ; then keep the Teeth clean with a stiff Brush and Powdered Charcoal, or Chalk, with about a twentieth part of Powdered Myrrh added to it, and a very little Camphor ; or use the Charcoal as before directed. Thoroughly cleanse the mouth with water after every meal, because any substance that decays in contact with the Teeth, produces lactic and other acids that corrode the enamel. All sweet things are instantly converted into acid by the presence of decaying animal matter, such as the fibers of meat, often detained between the Teeth. Keep the stomach in a good state, for the secretions of the mouth are generally in sympathy with the stomach. If the gums become spongy or detached from the necks of the Teeth, lance the gums and let them bleed freely, and gargle the mouth with strong Sage Tea, or with a little Alum and Water, or a little Tincture of Galls. To remove Tartar from the Teeth, use a mixture of Sal Ammoniac, common Salt, and Burnt Alum, as a Tooth Powder, twice a day, for an accumulation of Tartar is sure to destroy the Teeth.

MEDICAL USES OF SALT.

COMMON SALT, medically called Muriate of Soda, is one of the most abundant productions of Nature — tonic, purgative, anthelmintic and externally stimulant. It is administered in some cases of Dyspepsia and Worms ; in large doses to check Hemorrhage, or Bleeding from the Stomach, Lungs, and Bowels ; used as an ingredi-

ent in Clysters, as a fomentation in Bruises, and, dissolved in Water, as a Stimulating Bath.

In many cases of disordered stomach, a tea-spoonful of Salt is a certain cure. In the violent internal pain termed Colic, a tea-spoonful of Salt dissolved in half a tea-cupful of Cold Water, taken as soon as possible, is one of the most effectual and speedy remedies known, with a short nap immediately after. The same will revive a person who seems almost dead from receiving a heavy fall.

In an Apoplectic Fit, no time should be lost in pouring down Salt Water, if sufficient sensibility remain to allow of swallowing; if not, the head must be sponged with Cold Water, until the senses return, when Salt will completely restore the patient from the lethargy. In a Fit, the feet should be placed in warm Salt Water, with Mustard added, and the legs briskly rubbed; all bandages removed from the neck, and the person placed in a cool apartment, if possible.

In cases of severe Bleeding at the Lungs, and when other remedies failed, Dr. Rush found that two tea-spoonfuls of Salt completely stayed the blood. It should be eaten dry.

In Toothache, warm Salt and Water held to the part will relieve in many cases. If the gums be affected, wash the mouth with Brine; if the teeth be covered with tartar, wash them twice a day with Salt Water.

In Swelled Neck, wash the part with Brine, and drink it also twice a day until cured.

Salt Water expels Worms, if used in the food moderately, and aids digestion; but too much Salt Meat is injurious.

Salt is a most valuable remedy, and may be relied upon in Croup. The dose is a tea-spoonful, mixed with a table-spoonful of Honey, and given freely.

In Bowel Diseases, especially Dysentery, Cholera and Cholera Morbus, Salt is one of the best remedies known. In such cases it is to be mixed with Vinegar and Warm Water; and if there is any sickness at the stomach, as in Cholera, add also a tea-spoonful of ground Black or Cayenne Pepper to a tumblerful of the liquid; to be taken freely.

HOW TO CLEANSE WOUNDS.

SUCH as are not experts in this needful art, should heed the few simple hints which follow that they may be useful when service is required. See that you have in hand a clean sponge, dip in clean water, hold in your closed hand with the thumb elevated, and the lower portion of the sponge *below the hand*, so that the water may flow softly or with greater force as the sponge is squeezed, and held at a higher or lower point, as your hand passes over the torn and injured surfaces.

SHORT TREATISES.

CHILBLAINS, OR FROST-BITE.

CHILBLAINS are generally the result of slight frost-bite, and mostly occur on the feet and hands. They may be caused without even frost-bite, or freezing, by exposing the parts alternately to extreme cold and heat. The parts affected have a purplish red color, and are usually somewhat swollen, attended at times, especially if there is to be a change of weather, or it is about to "moderate," with intolerable itching, and often soreness and pain. They appear usually in the spring and fall, or in winter — during mild, damp weather.

Treatment. — In mild cases, washing the parts in Ice-cold Water, or with Snow, will generally be sufficient. Bathing with Spirits of Camphor and Turpentine is also good, in slight cases. Rub them, if *unbroken*, with either of the following stimulating Liniments: 1. Tincture of Cantharides and Compound Camphor Liniment, equal parts; mix. 2. Soap Liniment, 1 ounce, Tincture of Cantharides, ½ ounce, Turpentine, ½ ounce; mix. If *broken*, dress them with Resin Cerate, until drawn, and afterward with Lead Cerate. The most effectual remedy I have ever known — and it is generally effectual in all cases, if persevered in — is Rabbit's Fat. Take the fat or tallow of a Rabbit, anoint the part well once or twice a day, especially at night, on going to bed, and bathe it in well by holding the part to the fire. During the day, if the foot is the part affected, wear a bit of fresh Rabbit's skin next the affected part, with the flesh side next the foot. If there is much swelling of the affected part, with inflammation and soreness, poultice at night with Rotten Apples; or with Elm and Ginger; or cover the part with warm Glue. But in all ordinary cases, the use of the Rabbit's Fat and Skin will be sufficient. They will generally effect a permanent cure. Bathing the parts at night in fresh Cold Spring or Well Water will also be found serviceable.

In case a hand or foot, or any part of the body is frost-bitten or frozen, do not apply any thing warm or stimulating, nor bring the person near the fire, nor into a warm room suddenly. The best thing to do is to rub the frost-bitten part with Snow. Such has been the treatment for generations past, but recent experiments in Russia, mainly with dogs, have established the theory firmly that the best way to restore any part, or the whole body to its normal state after being frozen, is to place it in a warm bath, and make the bath gradually warmer until as hot as can be borne, say 120° Fahrenheit, and there holding it for some time, surrounding with heated blankets or exposing the person before an open fire. Stimulate internally by drinking hot tea and coffee, and perhaps

by using spirits within the bounds of reason. If Mortification should take place, the dead flesh must be allowed to slough off, and the part must be treated as directed under the head of "Mortification."

STAMMERING.

AT a meeting of the Boston Society of Natural History, Dr. Warren stated a simple, easy, and effectual cure for Stammering, which is known to be generally a mental and not a physical defect. It is simply, at every syllable pronounced, to tap at the same time with the finger; by so doing, the most inveterate stammerer will be surprised to find that he can pronounce quite fluently, and by long and constant practice he will pronounce perfectly well. Dr. Warren said this may be explained in two ways: either by a sympathetic and consentaneous action of the nerve of voluntary motion in the finger and in those of the tongue, which is the most probable, for we know, as Dr. Gould remarked, that a stammerer, who can not speak a sentence in the usual way, can articulate perfectly well when he introduces a rhythmical movement and sings it; or it may be that the movement of the finger distracts the attention of the individual from his speech, and allows free action of the nerves concerned in articulation.

FOR WEAK STOMACH AND DYSPEPSIA.

TAKE a demijohn half full of Wild Cherries, and fill with pure old Jamaica Spirits. Take half a wine-glassful twice a day. Use no Sugar, as it destroys the tonic properties of the Cherries. This preparation has accomplished wonders in restoring the sick. When you recover wonted health, let all spirits alone, and thus preserve it.

COSTIVENESS.

THE grand remedy is a proper attention to diet; let it be moistening and laxative; such as Roasted Apples and Pears, Gruels, Broths, etc. The Bread should be of unbolted Wheat Flour, or Rye and Indian Meal. Rise early, use the Shower Bath, and exercise freely. Wash the bowels with Soap and Water, and rub them well every morning, and relief will be had.

BLISTERS.

BLISTERS occasion so much pain at best, though at the same time one of our most valuable remedies, that any plan which can be adopted to give relief, when it becomes necessary to apply them, will be of great utility to the afflicted. The following method of using them is recommended by the *London Medical Times:* "The Blistering Plaster should be spread thinly on paper, or linen, not sprinkled

with powdered Cantharides on the surface, but instead thereof a few drops of Olive Oil rubbed on it and allowed to remain. Used in this way, the Blister acts speedily, without causing irritation, and does not prevent the water passing from the bladder. A Blister should never be spread upon leather, because the leather, by the heat of many parts of the body, becomes dry, partially crisp, and with difficulty adheres to the skin, thereby preventing it from acting well and generally over the whole part intended to be blistered. The Blister should be spread thinly, because the outer surface is only of benefit; when it is used in a thick layer, it becomes irregular, and consequently partial in its operation. The powdered Cantharides should not be sprinkled on it, because they will not add to its efficiency, as they act but slightly on the skin, but the active principle of the Spanish Fly being soluble in Olive Oil, affords a reason for the use of the Oil on the surface of the Blister. Dr. Robertson concludes by remarking, that every one can make this Blister for himself, of the most common materials, at a very trifling expense, and if this be any recommendation, it will act three, four, or six times, if uninjured, and the Oil gently renewed on its surface."

How to Raise a Blister. — Cut a piece of brown paper of the size and shape you intend to make the Blister. This, being well dampened, or moistened with water, is placed over the part vesicated; then take a smoothing iron, well heated, and apply over the moistened paper. This will produce a blistered surface, almost immediately, being effected by the steam generated by the contact of the hot iron with the moistened paper. This method of Blistering, being more speedy and less painful than that commonly adopted, is now generally used in all cases where it is a matter of importance to produce a quick Blister.

BLEEDING FROM THE NOSE.

THE bloodvessels, which expand upon the internal surface or lining membrane of the nose, are very easily ruptured; hence an unusual determination of blood to the head will often produce Bleeding at the Nose. Some persons are much more liable to the complaint than others; and males are more subject to it than females.

Usually the blood only flows from one side of the nose, but sometimes it is discharged from both, in which case it becomes more alarming.

Causes. — Great heat, violent exertion, bending the body with the head downward, and whatever determines the blood to the head, may excite Bleeding at the Nose. It is also often caused by picking the nose. It sometimes commences without any warning; while at other times it is preceded by heaviness in the head, giddiness, flushed face,

itching in the nostrils; sometimes by cold feet, and a chilly sensation all over the body. Habitual costiveness may also be regarded as a cause.

Treatment. — In all ordinary or slight cases, Cold Water freely applied to the back of the neck, the face, and snuffed up the bleeding nostril, will soon check it. Pressing externally, on the side of the nose that is bleeding, with the thumb or finger, so as to compress the ruptured vessels, and continuing it for a quarter of an hour or so, will often stop it. If these measures fail, take a piece of very dry and hard Salt Beef — that which has been smoked is best — grate into a powder, and push this up the nostril as far as possible, until it is filled, and let it remain. This never fails.

In habitual or frequent Bleeding at the Nose, it will be necessary to give a brisk purgative, repeated occasionally, and make use of measures to equalize the circulation. Keep the feet warm and the head cool.

DEAFNESS.

IT is seldom that the power of Hearing, once entirely lost, can ever be restored; and not always that even partial Deafness can be cured, though it may often be relieved. Partial Deafness is frequently owing to the accumulation and hardening in the ear of the ear-wax, which may generally be remedied by dropping into the ear such articles as are calculated to soften, relax, and stimulate. For this purpose the following are recommended.

Treatment. — Take Sulphuric Ether, 1 ounce, and add to it 1 dram pulverized Carbonate of Ammonia; let stand a few days to form a solution; if it does not all dissolve, pour off carefully the liquid from the dregs, and of this liquid drop into the ear once a day from three to six drops. The patient should lay his head upon the opposite side at the time, and remain in that position a few minutes, to allow the liquid to penetrate. This preparation is highly recommended, and, if persevered in, will, it is said, overcome almost any partial Deafness, or greatly relieve it.

Take pure Olive Oil, say 1 ounce, and ½ ounce, each, of Tincture Lobelia and Tincture Cayenne; mix, and, from a warm tea-spoon, drop into the ear four to six drops of this twice a day, shaking the vial well always before using it. This is relaxing, softening and stimulating, and in all ordinary cases will answer the purpose. Turkey Oil (or grease) is said to be still better than Olive Oil, and may be used instead of it, in this preparation.

The following remedy, long kept a secret, is said to be infallible, where it is possible for any thing to effect a cure: Take a common Eel, remove the skin and intestines, hang it before the fire, and let the oil drip into a pan or vessel; when done dripping, bottle the oil, and of this drop into the ear once or twice a day five or six drops from a warm tea-spoon. I have heard remarkable accounts of the

efficacy of this remedy, and doubt not but it is good. I believe it has never before been published.

HICCOUGH OR HICCUP.

HICCOUGH, medically termed *Singultus*, is a spasmodic action or convulsive catch of the diaphragm and respiratory muscles, and may be caused by Sour Stomach, excess of Bile in the Stomach, Flatulence, Indigestible Food, Overloaded Stomach, powerful stimulants (as Cayenne Pepper and spirituous Liquors), Inflammation of the Stomach, Poisons, and the like. When it occurs in low stages of Fever, it is an unfavorable and generally fatal symptom.

Treatment. — Like Palpitation of the Heart, Hiccough can very often be checked by taking in a full inspiration, and then holding the breath as long as possible; a draught, or "nine swallows" of Cold Water, taken without breathing, will often stop it. A lump of Sugar, melted slowly in the mouth and swallowed, will nearly always check it.

If it proceed from Flatulence, or Wind in the Stomach, give Fennel Seed Tea, or some other good Carminative, as Compound Spirits of Lavender, Essence of Anise, and Sulphuric Ether, equal parts of each, in tea-spoonful doses, every few minutes. If from Poison, give plenty of Sweet Oil and Fresh Milk. If from Inflammation of the Stomach or Bowels, give Castor Oil, 2 parts, and Spirits Turpentine, 1 part, in table-spoonful doses, every half hour, or hour, and apply a Mustard Draft, or cloths dipped in hot decoction of Bitter Herbs, to the stomach and abdomen. When it is Nervous, or occurs from Debility in the course of sickness or fevers, take equal parts, say ½ ounce, each, of Tincture of Musk and Tincture of Hyoscyamus, and give fifteen or twenty drops every half hour. Inhaling Chloroform will also be good.

A good remedy is either a tea-spoonful of Vinegar or Lemon Juice; or an ounce of Essence of Peppermint, as much Water, and a few drops of Sulphuric Acid, enough to make pleasantly sour; give a tea-spoonful or two every few minutes. Fomentations externally, or Mustard Drafts, will be of great service; also the Warm Bath.

INVERTED TOE NAIL.

THIS is a very troublesome and often painful affection. The edges or sides of the nail are disposed to turn down and grow into the flesh, giving rise to inflammation, ulceration, and often great pain and suffering.

Treatment. — The best remedy I have ever known for this difficulty, is to scrape with some sharp-pointed instrument, as the point of a penknife, a sort of groove or gutter in the center of the nail, lengthwise, from the root to the end. It must be scraped down to near the quick, or as thin as it can be borne. This renders the nail "weak in the back," so that it will gradually and ultimately turn up

at the sides, until the edges come above and over the flesh. Continue this, as fast as the nail grows cut and grows thicker, and you will eventually succeed in getting the nail in its proper shape and position. It will be proper to Poultice if there is much inflammation, and also apply Healing Salve. If ulceration, bathe the parts also occasionally with Tinctures Aloes, Myrrh, and Opium, equal parts, mixed.

STIFFNESS OF THE JOINTS.

THE Joints sometimes become stiffened, most generally from Rheumatism of the Joints, improperly treated. Such cases require Relaxing and Stimulating Liniments.

Treatment.—The following are recommended. Take Neat's-foot Oil, 2 ounces; Oil of Linseed, Oil of Hemlock, Oil of Cedar, Tincture of Lobelia, Tincture of Cayenne, and Beef's Gall, each, 1 ounce; Alcohol, 4 ounces; mix, shake well always before using, and bathe the Joint well with this two or three times a day. It is an excellent Liniment for Contracted Tendons, Stiff Joints, and Rheumatism accompanied with swelling.

Take about ½ pint of Angle-worms (usually known as Fish-worms), put them in a glass bottle, add 1 ounce of Oil of Sassafras and Spirits of Turpentine, and 2 table-spoonfuls of Salt, and let stand in the sun two or three days, or until they are dissolved; or if there is no sun, dissolve by gentle heat near the fire, then strain through flannel to exclude the dirt, and bottle for use. This Liniment, freely used twice a day, and persevered in, will overcome the Stiffness of any Joint, where it is possible to do so. As an auxiliary, the Joint should be steamed over hot Bitter Herbs once a day, or a hot fomentation of Bitter Herbs applied and bound on at night, such as Hops, Tansy, Catnip, Hoarhound, Smart Weed, Jimson Leaves, and the like. A poultice of Wheat Bran, made with a decoction of Bitter Herbs, and applied hot, is also very good, and should be used occasionally at night. The patient should also take internally some good Rheumatic remedy, such as has been recommended under that head, and endeavor to use the Joint as much as possible. The Warm Bath occasionally will also be good.

FRECKLES.

FRECKLES are yellowish brown spots on the skin, usually upon the exposed parts of the body, as the face, neck, hands, and arms. They usually occur upon persons of fair complexion, and sandy or red hair. They are probably owing to the derangement of the liver more than any other cause; sometimes also, in females, to irregularity of the Menses. Exposure to the sun also increases them. They are generally very difficult to remove, and often impossible.

Treatment.—Various washes have been recommended and used for their removal, among which the following are probably the best.

Take Rose Water, 4 ounces; pulverized Borax, 2 drams; mix, dissolve, and wash the parts twice a day with a little of this solution. Rain Water may be used instead of the Rose Water.

The following wash is probably still better: Take Beef's Gall, 1 ounce; Saleratus, Borax, and Gum Guaiac, each, ½ ounce, pulverized; Alcohol and Rose, or Rain Water, each, ½ pint; mix, and let stand ten days, shaking occasionally, Use as a wash twice a day.

A solution of Citric Acid, made by dissolving ½ ounce of the Acid in 1 pint of Rose or Rain Water, is also good. To be used the same as the others.

Lotion for Freckles.—1. Hydrochlorate of Ammonia, 1 dram; Lavender Water, 2 drams; Spring Water, 1 pint. Apply with a Sponge two or three times a day.

2. Hydrochloric Acid, 1 dram; Rectified Spirit, 1 ounce; Water, 8 ounces; mix, and apply as before.

It will be well to attend to the liver, by taking daily at the same time the Liver Pills or Powders. If there is a derangement of the Menstrual function, attend also to that difficulty. Avoid exposure to the sun.

RINGWORM.

A RINGWORM is an eruption running in curved lines, generally in a circle, that itches when rubbed, or when the body is heated.

Treatment.—Take Tobacco Leaves and boil them well; then add Vinegar and strong Lye to the liquor; wash the eruption often with this, and it will infallibly cure. To anoint several times a day with Castor Oil is said to be almost a certain cure for Ringworm.

Ringworm may be, in most cases, cured by simply scratching around the outer surface with the point of a sharp pin. The disease will not pass the line, if the skin is thus cut.

See Celadine, Blood Root, and Balsam of Peru for remedies.

NIGHT SWEATS

USUALLY result from debility, and need careful attention.

Treatment.—Take one good-sized Nutmeg, a lump of Alum, same size, and a heaping tea-spoonful of Cloves; pulverize all, and add to ½ pint of Brandy or good Whisky. Dose: A table-spoonful three or four times a day, shaking well each time before using. Or, take 20 drops of Elixir Vitriol in a little Water, three times a day, and drink freely of a cold infusion of Sage.

The warm Sponge Bath should be used at night, and cold sponging of the body in the morning on rising; wipe dry each time, and make use of severe friction or rubbing with a coarse, dry towel. Bathing or washing the body occasionally with a weak decoction of White Oak Bark will be found serviceable; also, with Vinegar and Whisky. Thirty drops of the Acetic Tincture of Blood Root, taken three times a day, is also a good remedy for Night Sweats.

CHAFING AND EXCORIATION.

CHILDREN and fat persons are all very liable to suffer from Chafing or Excoriation of the skin in certain parts, especially in warm weather. In children, the parts most liable to chafe are the inside of the thighs, behind the ears, and about the neck. In fleshy persons, in the arm-pits, inside of the thighs, the buttocks, and wherever there is contact and friction of the parts.

Treatment. — Usually, cleansing the parts well with Castile Soap and Cold Water, and anointing well with Sweet Cream, or a little Fresh Butter, in which there is no salt, will be found sufficient. The parts should also be bathed frequently with Cold Water. A solution composed of 10 grains Sulphate of Zinc, ½ a dram (or 30 grains) of Borax, to 4 ounces of Water, will also be found good, as a wash, to be used once or twice a day. Also, sprinkle on the excoriated parts a little Powdered Starch, or Powdered Magnesia, or Wheat Flour.

If the foregoing are not sufficient, use the following Ointment: Melt together equal parts, say 1 ounce each, of Spermaceti, fresh Mutton Tallow, White Wax, and Sweet Oil, into which sprinkle slowly, while cooling, and stir well, 1 dram of finely pulverized Oxyd of Zinc. Anoint the parts once or twice a day with a little of this. An Ointment made by simmering a handful of the inner fresh bark of Elder in 4 ounces of Fresh Lard, and 2 ounces of White Wax, is also an excellent application.

BLOTCHES AND PIMPLES.

BLOTCHED FACE, medically termed *Acne*, is of two kinds; the common Pimple, called *Acne Vulgaris*, consists of little, hard, inflamed pimples, or pustules, which often gather matter and burst. They appear on the face, forehead and chin, and sometimes even about the neck and breast. The other variety, called *Acne Rosea*, consists of red Blotches, sometimes of a livid color, which are very slow in their progress, and seldom terminating, like the other variety in pustules and suppuration. This variety is most usually found on the nose, giving to that organ a red, blotched, and sometimes pimpled appearance; it is also frequently located on the cheeks.

The intemperate or habitual use of Spirituous and Stimulating Liquors, and excessive indulgence in Eating, are the most common causes of this variety; but they are not the only causes; it may be, and often is, owing to Chronic Inflammation of the Stomach or Bowels, and may have been caused by Frost-bite, Erysipelas of the Face, and various other causes.

Treatment. — In the treatment of either Pimples or Blotches, the person should observe the following three things: Make free use of

Soap and Water, avoid all Stimulating Drinks and Food, and keep the Bowels loose and regular. Then use the following wash: Take Aqua Ammonia, Tincture of Lobelia, and Tincture of Myrrh, each, 1 ounce; apply a little of this two or three times a day to the Pimples and Blotches. If pustules form, open them, let out the matter, and continue to apply the liquid. Or use the following wash: Take Milk of Sulphur (Lac Sulphur), 2 drams; Gum Camphor, 1 dram; Alcohol and Water, each, 2 ounces; dissolve the Camphor first in the Alcohol, then mix, and wash the parts with a little of this every night on going to bed. The Borax solution recommended for Chafing may also be used occasionally. The new preparations of petroleum called Vaseline and Cosmoline are excellent applications. Get at drug store.

APPARENT DEATH—ASPHYXIA.

TREATMENT FOR DROWNING.

IF the person has been drowned but a short time, or there is the least hope of restoring him, he should be placed immediately in such a position as will best allow the water to pass out, or will force it out, of his lungs and throat. Remove his clothes, open the mouth, and lay the body across your knees, face downward, the breast and stomach resting upon your knees; or place the drowned person over a barrel or hogshead, in the same position; half a minute or so will suffice to let the water run out, the assistants making use of proper efforts in the mean time to aid in its expulsion; then wipe the body dry, wrap in warm blankets, and place it in a warm, dry, and well ventilated room; or if the weather is warm and the sun shining, place the body in the sun, with his face turned toward it. The whole surface of the body should now be thoroughly rubbed with the dry hands, by stout, strong persons, perseveringly; if the patient is in bed, Hot Bricks, Stones, or bottles of Hot Water should be applied about the body, legs and feet, and every means possible used to restore natural warmth to the body. At the same time means must be used to inflate the lungs. Hold the nostrils tight, and let some one blow strongly into the mouth of the patient, forcing air into the lungs; then press gently on the lower part of the breast, stomach, and region of the lungs, to force out the air again; then repeat the blowing or inflating, and so continue, as long as there is any hope or prospect of restoration. Occasionally turn the patient on his face, and let the head and upper part of the chest hang down a little, so that if there is any more water in the lungs, it may escape. Persevere in such efforts, and you may succeed beyond all expectation. Persons have been restored to life that have been under water for

several hours, by making use of the above means. A small hand-bellows, such as are used for kindling fires, if handy, may be used to inflate the lungs. Stimulating injections should be made into the bowels or rectum at the same time.

TREATMENT FOR HANGING OR CHOKING.

REMOVE the clothing from about the neck and chest; place the patient in an easy position, the head and neck a little elevated; then rub the body well with Hot Cloths, or with the bare hands, commencing gently at first, and increasing; at the same time, as soon as it can be done, let Hot Bricks or Rocks be placed about the body, between the thighs, to the feet, and under the shoulders; and endeavor to induce animation and breathing by inflating the lungs, the same as in case of Drowning. Bleeding is also recommended, to relieve the pressure of blood upon the heart and lungs.

TREATMENT FOR FREEZING.

PERSONS have been restored to life after being frozen to death, apparently, for several days. The proper course to pursue, where life has apparently ceased, from Freezing, or where the person is in a state of stupor and insensibility, is to carefully remove him into a cold room or barn, and cover the whole body with Snow, several inches deep, if it can be got, leaving only the mouth and nostrils free. Place the body so that the melted Snow may run off easily, and as fast as it melts, apply more. If you can not get Snow, then put the person in Ice-water. In this way thaw the body slowly and gradually, until the limbs and every part become pliable and natural. Be very careful at first, in handling, that you do not bend or try to bend the limbs, fingers, or any part, lest you should break them. As the limbs become pliable, rub them, and the whole body, with Snow; or, as the next best thing, Ice-water, and continue till the skin becomes red. After the frost has been overcome, or the person has become thawed, place him on a dry bed, in a cold room, and cover him with cold flannel clothes, and give a stimulating injection every fifteen or twenty minutes, such as Tincture of Camphor, Tincture of Cayenne, a tea-spoonful of each in half a pint of Warm Milk and Water, or the Camphor alone will do, in Warm Water; as soon as symptoms of returning animation appear, give injections every few minutes of warm Coffee, not very strong, and as soon as he can swallow, give him a tea-spoonful of Coffee every five or ten minutes. Be careful that no external heat is applied; do not even have fire in the room. A warm room would kill your patient beyond all doubt! He must recover his natural warmth in a cold bed and cold room, and must even avoid fire, the stove, or a warm room, for several days after he has been restored, or it might cause serious diseases of the bones. Later experiments, in Russia, go to show that it is safe and desirable to immerse in a Warm Bath, and increase the temperature until as hot as can be borne, and after these envelope in heated blankets.

TREATMENT FOR A FALL OR BLOW.

IN case of Suspended Animation or Insensibility, caused by a severe Blow or Fall, the best thing you can do is to give internally a little Arnica Tincture, about ten drops to a tumblerful of Water, well mixed by pouring back and forth a few times from one tumbler to another, and given in table-spoonful doses every two or three minutes, till several doses are taken. Also, bathe the surface, especially the bruised parts, with the same, or with Alcohol, to which a few drops of the Arnica Tincture have been added. If you have not the Arnica, give stimulants internally, No. 6, Camphor, or Spirits, and apply Stimulating Liniments or applications externally. As soon as the patient recovers, give an active Cathartic.

TREATMENT FOR STARVATION.

GIVE repeatedly small injections into the rectum of Warm Milk, and after a little, add to the injections Chicken Broth or Beef Tea. When the patient begins to breathe, give a few drops of Warm Milk every minute or two, and as he revives increase to a tea-spoonful at a time every five or ten minutes. As he still revives and asks for more food, give Toasted Bread and Water, in spoonful doses; and next, a little Broth or Beef Tea, and a few drops of Wine. Be careful not to give too much. Let him eat often, but only a little at a time.

TREATMENT FOR LIGHTNING.

DASH Cold Water freely over the head, face, and whole body, and continue to pour it on the head, and let it run down over the body for some time. If this does not revive him in a few minutes, dig a hole in the ground of suitable size, remove all his clothes, and place him in it in a half sitting position, and cover the body, all except the face, with the fresh earth. As soon as the eyes begin to move, shade the face; when he breathes freely, place him in a light and airy room, and wash the body with Cold Water.

TREATMENT FOR NOXIOUS VAPORS, GASES, ETC.

EXPOSE the patient to the open air, dash Cold Water in the face and over the body, rub the body well, and inflate the lungs, as recommended in cases of drowning.

TREATMENT FOR SUN-STROKE—COUP DE SOLEIL.

WHAT is called Sun-stroke is caused by exposing the head too long to the direct rays of the sun in extreme hot weather, until the brain becomes too much heated, causing the person to fall senseless to the ground. In such cases, whatever is to be done must be done quickly. There should be no waiting for the doctor. Go at

once to the fallen man, open his shirt-bosom, and lay the hand upon his chest; if the skin be cool, you may rest assured that, whatever the disease may be, it is not sun-stroke. If, however, the skin be burning hot, the case is certainly sun-stroke, and no time should be lost. The patient must be carried to the nearest water and immersed in it, if possible, or otherwise stripped to his waist, and bucketful after bucketful of cold water be dashed over him until consciousness begins to return, or the intense heat of the surface decidedly abates. It is not every man who falls unconscious in a hot day, that has sun-stroke; your hand upon the chest will prove the true *test*, and the water is the true *remedy*. Other cases, where clammy perspiration with coldness and faintness are the symptoms, entire rest, fresh air and a cool apartment are needed. In such cases give mild stimulants of brandy or whiskey well diluted with water, and given in small doses, frequently, until the system is gradually restored.

TO PREVENT SUN-STROKE.

PERSONS exposed to the sun in extreme hot weather, should keep the head wet with Cold Water as much as possible. To do this, there is, perhaps, no better way than to keep a Handkerchief, or bunch of Raw Cotton, in the hat constantly wet with Cold Water. As fast as it becomes dry or hot, wet it again, and occasionally, if convenient, wet the head well with Cold Water.

TO DECIDE WHETHER DEATH HAS OCCURRED.

THE fact may be readily determined; care should be taken to know that both breathing and circulation have ceased. If, by holding a cold steel blade of a table knife, or that of a razor, which are bright, near the nose and mouth, no moisture is condensed upon it, you may be assured that breathing has ceased. Careful listening by an acute ear over the region of the heart at the left side of the chest, will not fail to find as to whether the heart beats or not. If, in addition to these evidences, the body becomes increasingly cold and rigid, with muscular relaxation, deathly pallor, and a glazing eye, further evidence need not be sought.

OF NAUSEA.

SOME persons suffer from frequent nausea, often attributable to a somewhat disturbed state of the mucous membrane of the stomach or deranged condition of the liver, or to both. Cayenne Pepper and Curry Powder are well-known remedies; being pungent substances, they excite the secretions of the stomach. In other cases, an impeded circulation in the vessels of the parts named may occur, which may be removed by taking a Warm Bath or a Turkish Bath, assisted in sedentary persons by using less food and more plentiful supplies of exercise in the fresh air. As regards medicines, one to three or four drops of Hydrocyanic Acid, in two tablespoonfuls of water, or with a little Bicarbonate of Soda or Potash, or in half a tumbler of Soda or Potash Water, before food, will be useful. In some cases, three or four drops of Solution of Ammonia, in a wineglassful of water, when the feeling of nausea is most troublesome, may cure the ailment. In not a few instances a mustard poultice may be applied over the region of the stomach and liver for twenty minutes, every third or fourth day; or a Wet Rag, covered with Oiled Silk, and worn for an hour or two, may be found efficacious.

PEPSIN FOR WEAK STOMACHS.

PEPSIN has been more or less used in medicines since the middle of this century. Many physicians have ridiculed it as a substance that has no action, and one that will not relieve. If pepsin were really useless it would long ago have been discarded, instead of having constantly been growing in repute among sufferers from most forms of indigestion. It is now more used than ever, notwithstanding many adverse circumstances. Many different preparations of pepsin have been offered for sale, and of these not a few have been found worthless, or nearly so.

It was not until the revision of the U. S. Pharmacopœia for 1880 that pepsin was recognized and made officinal, although long prior to that it was very largely used by physicians. It is now generally understood that there are upon the market several American brands which are superior to the well-known French article of Bodault. *Saccharated Pepsin*, according to the new Pharmacopœia, "is the digestive principle of the gastric juice obtained from the mucous membrane of the stomach of the hog, and mixed with powdered sugar of milk." The Paris brand of pepsin has been said to be made from the mucous membrane of the rennet bags of sheep.

Prof. Beale, of King's College, London, remarks that "there is no kind of animal food that the pig will not easily digest, and very quickly too. His diet contains vegetable matter as well, and I need not tell you of the extraordinary quantity of nutritious substances of all kinds that a pig will consume and digest."

Thinking, as he says, "that the best and strongest gastric juice would be found in the gastric glands of the stomach of the pig, I procured some fresh pigs' stomachs, and, after having slit them open and removed the contents, I dissected the mucous membrane away from the muscular coat. This must be done, because the mucous membrane will be found in the stomach of the animal to be thrown up into a number of thick folds, and it is required to be laid out smoothly on a flat board. When the thick mucous membrane is thus spread out, a little water is allowed to run over it so as to remove much of the dirty mucus, and the remains of the food. You have then before you a soft, tolerably clean, smooth mucous membrane, which, in its entire thickness, consists of hundreds of thousands of pepsin-producing glands. But these gland-tubes are very minute. How are we to get the modicum of secretion which each contains? The mouths of the little glands open on the free surface of the mucous membrane. It occurred to me that, if I could only squeeze these glands, I might be able to press from the tube the active digestive substance which each contains, and before any chemical change of the nature of decomposition could even have commenced in it. I took a paper-knife, and by firmly scraping the surface in one direction, I succeeded in squeezing out the little drops of mucus from the gastric glands, without any difficulty whatever. In this way I sometimes obtained as much as three or four teaspoonfuls of thick viscid mucus from a single stomach. But this substance is not very manageable for experiment. It will not dissolve in water, though it may be diffused through it. The mixture will be very viscid, and it will not pass through filtering paper, while it very quickly passes into a state of decomposition. Few things could be less suitable for delicate experiments.

"Having obtained the potent material in the active state in which it exists, as formed in the body of the animal, I thought that, in order to prevent decomposition, the plan would be to dry it as soon as possible. I therefore spread the mucus in a very thin layer over the surface of a piece of clean glass about a foot square. The glass, with the mucus, was next quickly dried, at a temperature of 100°, before the fire, a current of air being allowed to play freely over it. In from twenty minutes to half an hour the mucus became perfectly dry, and could then be easily scraped off the glass. Being powdered in a mortar, it formed a tolerably fine powder, which had scarcely any smell, but tasted a little salt. If I took a pinch of this dry mucus and mixed it with a little tepid water, I no longer got a ropy mass, but a mixture which, by filtration, yielded a perfectly clear fluid. You may, indeed, without difficulty, make a perfectly clear acid infusion of the mucus from the pig's stomach, by adding to the dried mucus and water a few drops of dilute hydrochloric acid. You will then have a very potent

digestive fluid, which, after standing for an hour or so with occasional stirring, will be found to readily pass through the pores of the filter. If all the operations have been successfully performed, the filtrate will be as clear as the purest water; indeed, you would not from its appearance know it from water.

"Having obtained this dried powder from the mucus secreted by the gastric glands of the pig's stomach, and found that such excellent artificial digestive fluids could be easily prepared with its aid, it seemed desirable to try it medicinally as an aid to digestion, as it was evidently more efficient than many of the preparations of pepsin at that time in vogue. So I put it to the test in my own body, and swallowed some of the dried powder. It did me no harm. Then I made some into three-grain pills, and took one before each meal for several successive days. Infusions were prepared, which I drank, and no inconvenience whatever resulted from their use. After a time I prescribed the medicine for others, and soon found that it was really useful in assisting digestion. It relieved the uneasiness accompanying the process in many cases, slightly encouraged the action of the bowels, and prevented the development of flatus in many instances in which inconvenience and suffering had resulted from this circumstance. Indeed, there could be no doubt that this would be a useful remedy in many cases where the digestive power of the stomach was impaired. Mixed with the food of infants, the powder assists digestion in many cases, and in old age it is invaluable. Many old people, whose digestion is greatly impaired, may, indeed, prolong their lives if the process of digestion be assisted by mixing with the food, or by administering just before meals, a little of the powdered mucus from the pig's stomach.

"By careful microscopic examination I satisfied myself that there were no substances in the powder likely to do harm, and though I have examined the mucus from the pig's stomach in very many cases, I never once discovered an entozoon of any kind, or an ovum of an entozoon. You can test the action of the *Pepsina Porci* in the simple manner described below. You will find that a single grain, in point of fact $\frac{8}{10}$ths of a grain, will completely digest one hundred grains of the white of egg. It is interesting to watch, in a common bottle before an ordinary fire, the opaque albumen becoming gradually translucent, and then the transparent albumen gradually breaking down until a complete solution, a peptone is formed. In this way you may get what is known as albumen peptone.

"In order to test the value of any particular specimen of pepsin you may proceed as follows:—One hundred grains of hard-boiled white of egg cut into thin slices may be placed in a wide-mouthed bottle or flask with one ounce of water, and twenty drops of dilute hydrochloric acid (*Acidum Hydrochloricum dilutum*). One grain of pepsin powder is to be added, and the mixture placed before a fire, at a temperature of about 100° F. The flask is to be shaken from time to time. In about an hour the white of egg begins to look transparent at the edges, and in about four hours it will be completely dissolved if the pepsin is good. Pepsin will dissolve white of egg at ordinary temperatures if a longer time (from twelve to twenty-four hours) be allowed for the action.

"Now, since less than one single grain of good pepsin will digest 100 grains white of egg, two or three grains ought to digest as much meat as would be found in the 'eye' of a small mutton-chop. Three or four grains, therefore, of good pepsin is a sufficient dose, and will enable a patient to digest a small meal of meat even if the stomach secretes hardly any of the active substance, but, as a general rule, pepsin is only required to set the digestive process going, and probably much more than the amount of meat which an invalid would require would be dissolved by the dose of pepsin taken. You may obtain different preparations of pepsin and ascertain whether they really possess the power of digesting white of egg, and you may be sure that those preparations which will not artificially digest the albumen in the flask will not digest food in the stomach, and therefore ought not to be used.

"You may not only easily ascertain whether the pepsin you purchase is good or not, but if you choose to take a little trouble you may make your own pepsin. There is no difficulty or uncertainty in the process if a little care is taken."

According to the U. S. Pharmacopœia the Saccharated Pepsin is a white powder of a slight but not disagreeable odor and taste, and a slightly acid reaction. The Dispensatory says that "the chemical relations of pepsin are so delicate that it ought generally to be given by itself in this powder form, or in the form of a diluted glycerite, as the wines and elixirs are mostly unreliable." Those who are careful may easily get the genuine from the original sources.

NURSING THE SICK,

AND THE

MANAGEMENT OF THE SICK ROOM.

BY

J. H. JORDAN, M.D.

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HOW TO NURSE THE SICK.

THE importance of good Nursing, according to intelligent, scientific principles, has never been properly appreciated, otherwise more books would have been written upon the subject, and more attention given to a matter almost or quite as important as that of the Science of Medicine itself. A very large amount of the suffering endured by the sick, regarded as necessary symptoms of the disease, are, if the truth were known, more properly speaking, symptoms of Bad Nursing — the results of ignorance on the part of those who have the care of the sick. The great cause, the fountain source of physical evil in the world, is ignorance in regard to the Laws of Life and Health. Of this there can be no doubt. Disease itself is but the result of a violation of some of the Laws of Health. The symptoms of disease are but efforts of Nature to overcome and remove derangements of the system, or parts of the system, caused by violation of the Laws of Nature and of Life. The symptoms of disease, so called — that is, the suffering of the patient — are greatly modified or enhanced by attendant circumstances and conditions. Nature, in her efforts to throw off disease and restore the system to its normal condition, often has much more than the disease itself to contend with, in the ignorance of the nurse, and the unfavorable surroundings of the patient. A patient with Typhoid Fever, for instance, would do better, and be much more likely to recover, in a clean, well-aired room, in a healthy location, than if in a tight, filthy room, where pure, fresh air was not allowed to penetrate. This all will admit. Yet how seldom thought of or acted upon!

Much of the suffering, therefore, is unnecessary; it is not a legitimate or necessary consequence or symptom of the disease, but is the result of other causes, surrounding circumstances, or ignorance and carelessness on the part of nurses and attendants.

The office of nurse to the sick is a very important one, and quite as responsible as that of physician. The common understanding is, that its duties are limited to the giving of medicines according to directions, to the applying of poultices, plasters, and other external applications, and to "sitting up with" and "waiting on" the sick

one. This, however, is but a small part of the true office of the nurse. The routine, and less important, the mechanical part so to speak, of the duties of a nurse, may be performed by a person of the most moderate degree of intelligence; but the office of nurse means much more than that. It should embrace a comprehensive and practical knowledge of Hygiene, or the Laws of Health; or, in other words, a knowledge of the importance of cleanliness, of the right amount of warmth, of ventilation, or pure air, of light, of the right kind of food, and how and when to give it, and of many other matters of more or less essential importance. Many of the "worst symptoms" which patients suffer, and often death itself, may be traced directly to the ignorance of attendants upon these very subjects — to a want of proper ventilation, to too little or too much heat, to a want of cleanliness of the room, the bed, or of the patient, to eating too much, or at improper times, or perhaps to several of these causes combined. And this will be found true to a much greater extent of private houses, and among the people in the country, than in public hospitals. It is owing to the ignorance of nurses, and friends who attend the sick; and often to their doing, through mistaken kindness, what they ought not to do. Especially is this latter the case in regard to too much warmth, and in forcing or coaxing the patient to eat too much or too often.

By nature and by common consent, this kind and important office falls to the lot of woman. It is generally supposed that any woman, if she is not already a good nurse, may easily become such. This is a great mistake. As a general thing, women make better nurses than men; they are better fitted by Nature for the office than men are; and it is, probably, also true, that with proper instruction most women may become good nurses. But owing to neglect of the art, and the little importance that has been attached to it by the public as well as by the learned, the most essential elements of good Nursing are understood by but few. Disease, or what we see and know of disease — the symptoms — is a reparative process; or, more properly speaking, a conflict between Nature and some deleterious agent or influence in the system. The Art of Nursing, as generally practiced, seems calculated to hinder rather than aid Nature in its effort to overcome, repair, and restore.

The Laws of Health, which should be applied in the Art of Nursing the sick, are as little understood and observed in their relation to persons in health as they are in relation to the sick. The neglect or violation of the laws which govern life and health, will lead to disturbances and injurious consequences among the former as well as among the latter, though they may not always be so apparent nor so

injurious. And all this is owing to a lack of knowledge — or, if they have the knowledge, to carelessness — on the part of parents, nurses, and those who have the care of the sick and the well

In other parts of this volume the reader will find a great variety of facts, of the first importance to those who would be intelligent in these subjects. The new treatise on "Sanitary and Domestic Economy," will be found very accurate, interesting, and satisfactory.

Ventilation — Pure Air. — If I were asked what is the most important thing to be observed as a rule of good Nursing, I would say, "See that the air the patient breathes is kept as pure as the external air, if possible, and yet without chilling the patient." This is one of the most essential and important things that can be attended to. Pure air is essential to the health of well persons; how very important, then, is it that persons enfeebled by disease should have pure fresh air to breathe, if they are to overcome the disease and get well!

In ventilating a sick room, you should be careful where the air comes from which you let in. Never air a room from another room that has been closed for days or weeks previously, nor from a hall which is itself seldom, if ever, properly aired. The air which you let in should not come from a filthy locality, from an unaired, empty room, nor from a kitchen, nor underground or basement room. Endeavor, if possible, to get the pure air of heaven.

Vacant rooms are often kept closed up for weeks or months, the fireplace, windows, and all, and then used for sick persons, or for children to sleep in, without thinking it necessary to first give them a thorough airing. This should never be done; it is absolutely dangerous. Neither should a sick room open into such a room, nor be aired from it. Air, in order to be pure, must circulate; agitation and movement are as necessary in air as in water, to insure purity and avoid its becoming stagnant, corrupt, and poisonous. Confined air, like standing, stagnant water, may soon become the source of disease and death. Never air a patient's room from a vacant or unused room that has been kept closed previously; never put a patient, children, or any body in such a room, until it has first been well ventilated with pure fresh air, and, if possible, a fire made in it.

A fireplace, or grate, in a room, is greatly to be preferred to a stove. All rooms should have fireplaces, for health, if nothing else; and the fireplace should never be closed. Some people, as soon as the season for having fires is over in the spring, close up the fireplace of the parlor, sitting-room, bed-room, and every other room about the house, where a fire is not necessary. This is bad policy. A fireplace should

never be shut up. It serves, when open, whether with or without fire, as a most important ventilator, an escapement or draught, through which the air may constantly change. By opening a window a little, say at the top, by sliding down the upper sash a little, or if this can not be done, by taking out one of the upper lights, and a good brisk fire in an open fireplace, a fine draught and plentiful supply of fresh air can be obtained and the room kept properly ventilated. You need have no fear of the patient taking cold under such circumstances. Of course, I suppose the patient to be in bed, and well supplied with the necessary covering, according to the season and temperature of the weather. If you will notice, you will find that patients do not take cold while in bed. You need never be afraid of too much air, if your patient is in bed, and is properly protected with bed-clothes. It is better even to make use of artificial heat, by applying about the patient's feet, legs, and body, warm bricks, heated irons, bottles of hot water, and the like, rather than not have the room constantly supplied with fresh air, fearing to make the patient too cold. The time when a patient is most apt to take cold — the time of danger, and when you are to be cautious about "draughts of air," and "cold rooms" — is when he first gets up out of a warm bed. At such times the system is very apt to be in a condition to take cold, or receive a "check of perspiration" (which is the same thing) very easily. The body is enfeebled from long confinement to bed, the skin in a lax condition from perspiration, the pores open, and altogether the condition of the patient such that sudden contact with a cooler atmosphere, or coming into a draught, even but the slightest, of fresh air, may give him a sudden, severe, and dangerous cold. Great caution should be exercised in this matter of patients getting out of bed, and "sitting up," to see that it is not done at improper times, and that the condition of the atmosphere in the room at the time is right. If there is a draught through the room while the patient is in bed — as there may be with perfect safety — it should immediately cease on his getting up; if windows are up, or doors open, they had better be closed, for awhile, at first, at least. If the patient is likely to take cold, it will be during the first few minutes after rising. Too much caution, therefore, can not be exercised. And especially should a patient not be allowed to get up too soon after taking a sweat, or while under the influence of sweating and relaxing medicines. In such cases a room that would be sufficiently warm and perfectly safe for the patient, while in bed, might be dangerous for him, if he should suddenly get up, being too cold, or having too much of a draught through it. This should never be forgotten or overlooked by those who have the care of the sick.

Temperature — Warmth. — Temperature, or a proper degree of warmth in the room of the patient, is of the first importance. It is essential that we have pure fresh air; in cold weather, such air is cold; hence we must see to it, that in securing one essential, we do not overlook and neglect another, second only to the other in importance. We must not render the room too cold for the health or comfort of the patient. In regulating the temperature, and securing proper ventilation, it must be so done as not to "chill the patient." It seems to be quite a common idea that to have the air in a room as pure as that outside or any thing near it, it must be as cold. This is a great mistake. A room can be kept at any degree of temperature desired, and yet properly ventilated and filled with a healthy atmosphere.

In maintaining a proper degree of warmth in a sick room, the vital powers of the patient must be considered, his strength, the temperature of his body, and his ability to resist or endure cold. These will be found to vary greatly according to different hours of the day; that is to say, the vital energies of patients, their physical warmth and powers of endurance usually rise in the after part of the day, so that a patient who may be quite feeble, cold and chilly in the morning and forepart of the day, may, in the same room and same temperature, be uncomfortably warm and oppressed in the afternoon and evening. This may be owing to the fact that the general temperature becomes warmer in the afternoon than it was in the morning; but it is mainly owing to the fact that patients themselves possess more vitality, strength, and warmth in the after part of the day, than they do in the forepart. Hence, windows may be open in the afternoon that it would be improper to raise before eleven or twelve o'clock.

And here I would remark that it is both proper and desirable that the windows in a sick room should be so arranged that the patient, if he can get up himself and move about the room, may be able to open and shut them easily himself. In fact, a sick room is seldom kept properly aired, or at any proper temperature, if this is not the case. The patient can, in such cases, generally tell best what he needs, whether air, warmth, or cold — Nature being the best and safest judge. The greatest evil of a tight room without circulation is that the patient is compelled to breathe over and over the same atmosphere, or his own breath, which becomes more impure the oftener it is breathed. The oxygen in the atmosphere gives life to animated nature — it is that which makes it the breath of life — by purifying and revivifying the blood as it comes in contact with it when breathed into the lungs. Of course, every time the same air is breathed, it loses or gives off a portion of its oxygen, which goes into the blood, so that

it may thus soon be deprived of the greater portion of its vitalizing power, and thus become unfit to sustain life, to say nothing of the impurities it receives from being repeatedly breathed. Patients are sometimes suffered to warm their room simply by repeatedly breathing their own breath. This will do it, if the room is tight and all fresh air excluded; but it is criminally wrong. Such air is actually poisonous, and the ignorance or negligence that will place the sick in a position where they are compelled to labor under a disadvantage that not only retards recovery, but actually endangers life, can not be too severely condemned. Could people be made to see and realize the influence which the breathing of foul air has upon the system, there certainly would be more attention paid to the proper airing of rooms, and especially sleeping rooms. Persons suffer more injury, it is said, during sleep than while awake, from breathing impure air. How important, then, to keep the air in our sleeping rooms, and during the night, as pure as possible! It would be better to suffer with cold, and have free ventilation, than to have a close, tight room warmed by repeated and constant breathing of the atmosphere in it. And if this is desirable for persons in health, how certainly is it so for the sick! If sick rooms can not be kept properly ventilated during the night — as sometimes they can not — they should be well aired in the morning. Go into a close room early in the morning before it has been aired, in which two or three persons slept during the night, whether sick or well, and you will find the air any thing but wholesome or pleasant. This comes from a want of ventilation. The room is kept tight, for fear of making it too cold.

Patients usually feel the cold more in the morning than in the evening. As I have said, their vital powers are lower than at other times, and usually higher in the afternoon and evening. If feverish at night, with burning hands and feet, they are almost sure to be chilly and shivering in the morning. It is the usual practice for nurses and attendants to heat the foot-warmer at night, or to place hot bricks, rocks, or bottles with warm water about the patient, but neglect to do anything of the kind in the morning — being either too busy, or else not thinking it worth while. They should just reverse the matter. Artificial or external heat is much more likely to be needed in the morning.

But there are other things to be looked after in a sick room. Every thing in the room which can give off *effluvia*, tends to poison and make the air unhealthy. There ought to be nothing in the room, besides the patient, that can gives off effluvia or moisture. The damp from towels, or any other article hung up to dry, goes into the air for the patient to breathe; yet these little things are seldom

thought of. One of the worst habits is that of leaving the chamber-pot or vessel, with its contents, under the bed. Sometimes it is covered; but more frequently, if it contains only urine, it is not, and is left standing for hours unemptied, to saturate the under part of the bed and mattress, and fill the room with poisonous exhalations. A vessel for such purposes should never be left standing under the bed or in the room for one minute with its contents — though it contain nothing but urine — *without being well covered;* and if ever so well covered, it should be emptied as soon as possible, and well cleansed. Day or night, make this an invariable rule. And the emptying and cleansing should be done, *not in the room*, but out of doors, or at the water-closet. The habit of bringing in a bucket or slop-pail, and emptying the bed-vessel or chamber into that in the room, is most abominable! It should never be done, neither in the rooms of the sick or well. But, by all means, never do it in a sick room. You can not be too particular about this matter. As to fumigations and "disinfectants" about a sick room, I would say, as a general thing, avoid them.* But, by all means, let me impress upon the reader, upon every nurse, and upon every one who has any thing to do with taking care of the sick, that free ventilation, with pure, fresh air, a proper degree of warmth — not too much or too little, but graduated to circumstances, and to the condition and wants of the patient — and cleanliness, freedom from poisonous and injurious gases, evaporations, and bad smells, are essential requisites and conditions in a sick room. In order to ventilate a room through a window, and at the same time purify the air, and free it of noxious influences and gases, it is not sufficient merely to raise the window, or the lower sash. This will do to let in the fresh air, but it will not allow the impure air to pass out. In order that the latter may escape, and that a healthy ventilation may be established, there should be a small opening at the top of the window also; the upper sash should be let down a few inches, or, if that can not be done, a pane of glass, near the top, should be taken out. Then, if cool, fresh air is let in at the lower part of the window, the impure air of the room (being warmer, and therefore lighter) will rise and pass out at the upper opening, and along with it the impurities in the form of effluvia or vapors, etc. This philosophical fact should always be borne in mind, in attempting to ventilate and purify rooms. But the most important reason why persons should have pure fresh air to breathe, well per-

* It affords us great pleasure to present to our readers the new and admirable scientific treatise, prepared by one of our most distinguished authors for this work, and given under the head of "Sanitary and Domestic Economy." The whole question of disinfectants and deodorizers, is discussed and made plain.

sons as well as sick, is owing to the fact stated, that it is from the oxygen in the air we breathe that the blood is purified, vitalized, kept in a healthy state, and life maintained. "In the blood thereof is the life." This fact was known in the days of Moses as now; but it was not known how or why the life was in the blood, how the blood was purified, and how it not only sustains life, but how also it circulates through every part of the system, and builds up and makes the entire body. It was not known then, as it is now, that though "the life is in the blood," yet that it is the air we breathe that quickens and gives the life to that blood; and that without this vitality — breathing this oxygen or life-giving principle — the blood could not sustain life for a single hour. When persons breathe bad air — air that is deficient in oxygen from having been breathed over — or where the oxygen has become deficient from any cause; or when the difficulty is caused by sudden cold settled upon the lungs, or by a filling up of the air-cells of the lungs with mucus, and the like, as in Pneumonia, Lung or Winter Fever, and other similar diseases, so that the blood can not be properly oxygenated — the consequence is, that the blood soon becomes weak, impure, and deficient in life and energy, and the person is liable, and quite likely, to take some form of disease of the low Typhoid type. How often do Lung Fevers, Winter Fevers, and diseases principally affecting the Lungs, terminate in *Typhoid* Fevers and conditions? And how often do Typhoid Fevers, Ship Fevers, Camp Fevers, and the like (all being the same in cause and character), result from over-crowded apartments, from sleeping or being confined in close, damp rooms, as in the holds of ships, in damp tents filled with soldiers, in crowded military prisons or jails; all showing that a deficiency of pure air is the main cause. The blood requires a constant supply of oxygen to maintain life and health; it must receive this by coming in contact, through the lungs, with the air, as it is breathed; and whenever it fails to receive that supply, whether owing to the impurity or deficiency of the air that is breathed, or to inability of the lungs themselves, it matters not, the consequence will be the same — impurity, debility, weakness of the blood, and a consequent loss of vitality, of life and energy in the system. And if continued far enough, will result in disease of a low, weak, corrupt, Typhoid character, as are all diseases which result from poverty or weakness of the blood — in other words, from a deficiency of oxygen in the vital fluid.

Health of Houses.—The Laws of Life and Health are as fixed and certain, and as plain as other Laws of Nature, and if we only knew it, as wise and beneficial as they are inflexible. Yet we violate them, and suffer the consequences; probably blame Providence, or

lay the catastrophe to the inscrutable wisdom or purposes of Providence. It is very common, even among educated people and physicians, and among the religious it is often considered an act of piety, reverence, and Christian humiliation, to ascribe all disease, sickness, accidents, and suffering generally, to "the inscrutable wisdom, design, and purpose of Providence." This is a very good way to cover our ignorance, and may serve to console us in troubles and bereavement, when too late to remedy the error. But it is all the sheerest absurdity and ignorance, to call it nothing worse; and besides ascribing, by implication at least, a dishonorable character to Deity, it is calculated to do great injury, by leading people to neglect to study and understand the laws which pertain to life, health, and disease, of the utmost importance to them. Disease is caused by inattention to God's laws. He has established certain laws and conditions, and we believe them to be the best that could be established; it is for us to find out and understand those laws, and try to live in accordance with them; we violate them, however, suffer the consequences, and then blame Providence! But Providence does not perform miracles in our favor, so that we may escape the natural penalty of our transgression. Our ignorance will not help us. The Laws of Life and Health are as fixed as the Laws of Gravitation; they make no allowance for ignorance. If we violate them, it is all the same whether we do so knowingly, or through ignorance; the consequences we must suffer.

Perhaps the Laws of Health are violated, or as little consulted, in the location, arrangement and construction of dwelling-houses, as in any thing else. Houses built for the use of the sick, hospitals, infirmaries, and resorts for invalids, of course, should be constructed in accordance with the best hygienic rules, and with a view to securing all possible advantages favorable to the health of inmates. This is not always done; indeed, we fear is but seldom done. But as I am writing for the benefit of those who inhabit private houses, I will leave the matter of hospitals and public institutions for some other writer. This book is for the use of individuals and families, and more especially for those in the country and smaller towns. In cities ground is valuable, and rated by the foot or the inch, and houses are crowded as compactly as possible, persons who build can not arrange their houses and rooms so easily, but must generally do the best they can. This, probably, is very seldom done. But in the country, and in the smaller towns and villages, more freedom can be exercised. There, persons can generally plan and arrange their houses as they please, even to locality; and can secure the advantages that may be sought from air, sunshine, light, and location.

All dwelling-houses should be constructed to secure at all times an ample share of fresh air, light, and sunshine; they should be located so as to insure easy drainage, so that the cellars and premises can be easily and perfectly drained. Good drainage is very important. Pure water is also important in a hygienic point of view. (For practical modes to attain these, see treatise on "Sanitary and Domestic Economy.") Cleanliness is essential to health — cleanliness of person, of the house, the room, and surrounding premises. Plenty of water is necessary to secure cleanliness; and the character of the water should be looked to. Water is an essential of life, and it should be made a point of the highest and first importance to have good, pure water for domestic purposes. The best water, unless it be soft spring water, is pure rain water, contained in good cisterns. Every house should have a good cistern. Experience has abundantly shown that, during the Cholera seasons in this country, those persons who used cistern water (or rain water contained in cisterns), very generally escaped that dreadful disease; while, on the other hand, it prevailed most extensively and fatally in limestone districts, and among persons who used hard limestone water. Pure soft, or free-stone water, well or spring, is next best to cistern rain water, not only during Cholera times, but at all times and for all purposes. But go into the country and see the water people very often use — sometimes from wells, sometimes from a sort of springs, and not unfrequently from pools, ponds and dirty creeks — and you need not be astonished that they have constantly more or less sickness in the family. It is surprising how little attention is paid to getting good, pure water, in some parts of the country, and by some people in all parts of the country.

There is more danger, more injurious effects received from *drinking* impure water, than from any other way of using it. Using it for cooking purposes is not so bad, by reason of the changes it undergoes in boiling, which tend to purify it, and destroy or get rid of its injurious properties. It is dangerous at best to use bad water, and it should be avoided when possible.

Have your cisterns built so that the mouth of each shall admit of free circulation between the outer atmosphere and the air inside. This may be done by "bricking up" a chimney, from the inner surface of the cistern, to the hight of a foot or more above ground, and then covering the opening with a net-work of wire attached firmly to a frame, which should cover the brick. The object may also be attained by using a wooden box. Thus you may always avoid having the water smell badly, as it surely will, at times, if the cistern is kept

closed tightly. Have your cistern *cleaned out* at intervals of a year, when the water is low.

In constructing houses, care should be taken to so arrange the rooms, halls and windows, that fresh air may at any time be introduced directly into any room or part of the house. This may easily be done by any good architect or builder. If people desire health, or to regain it when lost, they must conform to certain cardinal principles, or not expect it. Air and water are essentials of life, while upon their purity may depend the amount of health we enjoy with that life, and even life itself.

Light is also one of the essentials of health. A *dark* house may always be said to be an *unhealthy* house. A sick room should never in the day be dark, unless purposely made so on account of disease or weakness of the eyes, or some such reason. Patients do not recover well in dark rooms. In constructing houses, regard securing light for all the rooms, as well as fresh air. It is not necessary that the sun shine into each room, but it should shine upon the house outside —the free light of heaven must penetrate the rooms. It is important that a room used only as a sleeping room at night, shall be freely penetrated by light during the day, as if used only in the day time. Light is conducive, nay, essential, to health. This you may see by placing a plant in a dark place. Though it may have plenty of water and air, it will droop, become pale, tender, feeble, and eventually die. A room that is always dark can not be healthy for any purpose; darkness breeds disease. Such a room is not fit to live in, sleep in, nor, by any means, to be sick in. Nurses can not be too particular about light, if they would see their patients recover rapidly.

Drainage is very important, yet how few ever think of it! In cities, the lack of proper drainage is often an intolerable nuisance, as well as the fruitful cause of sickness. While in the country, and small towns, where each farmer and householder controls the matter of drainage about his premises, and is therefore responsible for the consequences of neglect, there is very little attention given to it. If water gathers in pools or puddles about the house, it is allowed to stand and become stagnant, and emit unhealthy, poisonous vapors for months, or until it passes off by evaporation. If cellars are damp, or water gathers in them, it is looked on as a matter that can't be helped, and so must be put up with! And yet, if these people have the Ague, or Bilious or Typhoid Fever, they will wonder why it should be so!

No water should be allowed to remain on or near the premises, to stagnate and breed pestilence, miasmatic and poisonous vapors, as stagnant water is sure to do. Not even should dampness be allowed

under or about the house. I have seen cellars so damp, even in dry weather, that they constantly must have filled the buildings over them with a deleterious if not poisonous atmosphere; and yet the inhabitants of these houses never dreamed that they were running risks, or in any way violating the Laws of Health. When the "sickly season" sets in, however, they generally pay the penalty for such violations. Ignorance of these laws will not save you. It is not uncommon, indeed, to find cellars in low, flat localities, with standing water in them half the year round! How can people hope to have health when such things are permitted?

Not only should cellars be kept dry, but no rotten, decayed, or decaying vegetables should be allowed to remain in them — not a day nor an hour. Though the bad effects may not be seen or felt at once, the seeds of disease may be thus sown, that will afterward result in death or loss of health. It is better to have no cellar at all to your house, than to have a damp or wet one; and if you can not have a dry cellar — if the nature of the ground is such that it is impossible to prevent water from rising in it — as I know it is sometimes — and you can not *drain* it, so as to prevent it from being damp most of the time — then fill it up. If the location, however, is such that it can be drained, then to do so must remedy the matter. But if this can not be done, then fill it up, or build you another house without a cellar. It is far better to have no cellar under your dwelling, than to have one that may prove a source of pestilence, disease, and death.

Next to damp, filthy cellars, are puddles, pools, and bodies of stagnant, filthy water about the premises. Nothing of this sort should ever be allowed. Fresh, living, running water, close to the dwelling, can do no harm — or is not likely to; but stagnant water, especially in warm weather, can not be otherwise than injurious. Proper drainage can always remedy such evils.

Keep the premises *under* your house always *dry;* do this whether you have or have not a cellar. Allow no water to run under the floor from the outside. A little ditching and draining around the house will prevent it. Have such arrangements that when it rains the water will immediately run off from about the house (instead of under it), the further the better, so that it may not stand in puddles or ponds anywhere about the premises — and you can then have it to say that, in this respect at least, you have not *invited* disease to enter your household.

But with all the other essential conditions and prerequisites to good health about a house, it is impossible to get along properly without cleanliness. People are so unaccustomed to consider how to

make a home healthy, that we have sought out one of the most accomplished scientific men in the United States, and had him present a great amount of important information in detail, as will be seen by references to pages 1019 to 1085, inclusive. Many do not reflect upon this subject, but take every disease that comes as a "visitation from the hand of Providence;" a thing to be "resigned to;" or if they do, as a duty, think of the matter as a thing possible to be accomplished, they are very likely to commit mistakes in their attempts to accomplish it, such is their ignorance on the subject. But the great evil, especially in the country, consists in doing nothing, taking no pains or measures whatever to maintain cleanliness outside and around the house, and the premises. Too many seem entirely indifferent. But they suffer, nevertheless, when the "sickly season" comes round!

It is as important that the kitchen and the back yard should be clean, as that the parlor and the front yard should be. And these may be all that could be desired, and yet there may be a filthy pig-pen, or cow-pen, or stable, near the house, that shall prove not only a nuisance, but a never-failing source of disease! But I need not specify. Cleanliness is as important *about* and *around* a house as *in* a house, if people would enjoy the health that is within their power — the health which they might enjoy if they would — they must observe the laws of cleanliness, not only as to their persons, not only as to the rooms which they inhabit, but on the premises where their houses stand. Plenty of fresh, pure air, accessible to all rooms, free and unobstructed light, pure water, and dry and clean premises, are essential conditions of health, in all households, and in all buildings in which human beings are to live. These are conditions which Nature has prescribed, and when we violate or neglect them, we must suffer the consequences.

Attention to Little Things.— One of the most important qualifications in the art of good Nursing, consists in attention to *little things*, and in so arranging that rules and regulations about small and seemingly unimportant things shall be strictly carried out; and this, too, as well when you are absent from the patient's room as when you are present. No nurse can be always present; nor is it necessary, provided she so manages that the right things shall be done in her absence as well as if she were present and did them herself. The good, the wise, the thoughtful nurse will think of these things, and when she must be absent — as often she must — will so arrange and provide that her patient shall receive no detriment on account of her absence.

We can not, of course, lay down rules that shall govern in all cases. But a few illustrations will show what we mean. The reader

can continue the subject, and improve upon the suggestions here given. Suppose the nurse goes to supper; but not having left proper instructions with the person who is temporarily in attendance, in comes some one with a message for the patient, it may be a letter, or a verbal message, but one which the patient should not have at that time. Yet the messenger, after dashing into the room, divulges the message, and it throws the patient into a state of great excitement; he worries all night about it, and the result is, he is set back several days in his recovery. This is but an example; a score of cases of a similar nature, or that may be owing to a like *neglect*, can easily occur—and all because the nurse or person in charge was deficient in forethought, and failed to properly instruct her substitute. A person may enter the patient's room through mistake, because the door was left unlocked; it may be the washerwoman hunting for the dirty clothes, or it may be a strange washerwoman, who comes bolting into the room, making a great noise, and perhaps startles the patient from his first sleep, and so frightens or excites him, that he can sleep no more, the effect being very injurious. The patient himself may think nothing of it, and for the present may feel none the worse for it; but all such things have an injurious effect, sooner or later, and sometimes are fatal. The nurse did not provide that her patient should be as well protected and cared for in her absence as if she were there; she failed to properly instruct her assistant, and to guard against the possibility of a stranger bolting into the room, through mistake or otherwise — against improper or unpleasant intelligence being communicated to the patient — against two or three talkative visitors imposing themselves upon him, and various other possible things of this sort, occurring in her absence; at supper, or other meal; or while on a longer absence. Had the regular nurse been present, she would have known just what to do in the emergency, and would have prevented all evil consequences or disturbances; she should have so instructed the person left in her place, that what ought to have been done would have been done. That is what is meant by managing the affairs of a sick room. And that is what a good nurse — one who understands her business — will see to having done. That is what is meant by attending to the little things.

A sick person ought never to be "surprised;" and with proper management never need be. It is not enough that the nurses, or those who attend specially to the sick, understand what is proper and what is not; the servants about the house, and every one else, should be properly instructed, so that they will not, in the temporary absence of the nurse, let in an improper visitor, or turn off one that should be admitted; that they will not improperly deliver or withhold a

letter or message; that they will not open a window or passage communicating with an unhealthy, unaired or filthy room, dirty closet or cupboard, a newly-painted room, an uninhabited musty room, and the like, through the mistaken idea of *ventilation*, or *airing* the patient's room. Such things are often done — are very liable to be done — in the absence of the intelligent nurse, if the person or persons left in charge have not been properly instructed. The prudent nurse will always see that they *are* thus properly instructed; it is a part of her duty — as much so as to attend properly to the patient, to his wants and necessities when present.

To be "in charge," that is, have the management of a sick room, means not only to carry out the proper measures yourself, but to see that every one else does so too; to see that no one, either ignorantly or intentionally, neglects or prevents such measures from being done properly and certainly. It is neither to do every thing yourself, nor to appoint a number of persons to do each duty — but to insure that each does that duty to which he or she is appointed. This is the meaning, above all, which is properly attached to the word "management," and should be so understood by those "in charge" of the sick, whether of numbers of sick, as in hospitals, or of individual patients. And it is generally less understood, and more neglected, where there is but one patient than where there are a great number. One sick person is often "waited on" by three or four persons less properly, and is really less cared for, than half a dozen patients who are attended by but one person; and all for want of proper "management" by the person in charge. It is often said that there are few good servants now. It would, perhaps, be better to say that there are few good mistresses.

Quiet to be Maintained. — Noise is a great enemy to the sick, at all times, and sometimes is the cause of fatal consequences. But it is impossible to avoid all noise, and therefore we must do the best we can. And I will here say, at the outset, that what may properly be termed *unnecessary* noise in and about a sick room, is far more injurious than that which is necessary or unavoidable. Indeed it is that which does the mischief—the noise that is unnecessary, and that might and should be avoided — and it is about that that I wish to speak.

It is astonishing how a patient will stand the regular, customary noise about the house, the noise in the street, rumbling of wagons, and the like, or the work even of the carpenter upon some portion of the house, or any other loud noise in the regular course of ordinary business; while talking in the next room, the creaking of shoes, or romping of children in the hall, or even whispering in his own room, will put him all "out of sorts," or so disturb him

that he will not recover from it for days. So far as mere noise itself is concerned, it is the unnecessary, the avoidable and unusual noise, I repeat, and would impress the fact, that does the injury. Let the nurse, the physician, and all who have charge of the sick, understand this fact once, and it will be easy to apply the remedy. If the noise is both *unnecessary* and injurious, it can and will be prevented.

There are some patients, especially in certain conditions, where the brain is affected, and while under the influence of certain medicines, as Quinine and Opium, who will be affected by mere noise of any kind. The hearing at such times is very acute, the brain and nervous system very sensitive, and noise of all kinds painful, and, of course, more or less injurious. But in all ordinary cases and conditions it is the unnecessary, irregular, and little noises that annoy, disturb, and injure.

Again: Any noise or conversation that excites apprehension, anxiety, or expectation in the mind of the patient, is of the most injurious kind. Of this kind, perhaps the worst, most cruel and thoughtless, is that of physicians consulting and talking with members of the family, the nurse, or others, outside the patient's room, in the hall, or an adjoining room, just loud enough for the patient to hear that conversation of some sort is going on, but too low or too distant for him to understand what is said. Physicians ought to know better than this; many do, but many do not, or if they do, are too heartless to care. The patient knows or believes that they are talking about him, his condition, and if his case is bad, he is sure to think that it is so bad that they are afraid to let him hear what they say or think. All this is cruel, as well as most injurious.

Then whispering — a very common practice — in the patient's room, is another great evil. A friend calls, or perhaps several, to see how the patient is doing, and for fear of disturbing him — thinking, it may be, that he is asleep — they set to, along with the nurse or person in attendance, and hold a conversation in a whisper! A nurse that will allow this, for one moment, is not fit to wait on the sick. No whispering should ever be allowed in the sick room — unless the patient be an infant, to understand or think that they are talking about it. Nothing should be said in presence of a sick person that is not proper for him to hear, nor in such a tone of voice that he can not hear and understand it. No effort should ever be made or permitted, in the patient's room, or near it, to say any thing in such a way as that he shall not hear it, or that he can think that it was done so he should not hear it. Every intelligent nurse can understand this, and the reasons for it, and can make the proper ap-

plication. A patient hearing low conversation in an adjoining room, or whispering in his own, will necessarily conclude that it is about him — something which would excite or depress him, if he heard it — something about him which they are afraid to let him know; this he will think, no matter what they talk about. The effect, of course, must be worse on him than if he heard and understood all they said. Besides all that, whispering, low talking about a sick room, and seemingly studied efforts to prevent noise — yet all the while making an unusual and unnatural noise — is far more annoying and disturbing to a patient, than ordinary talking and walking. The rustling of a silk dress, the jingling of keys, the creaking of shoes, are bad — worse than much louder noise.

Sudden loud, unusual noises, of course, are to be guarded against as much as possible. A patient should never be roused from sleep by noise. Never allow a patient to be waked, neither intentionally nor by accident, is a paramount rule in all good Nursing. If a patient is roused out of sleep by some sharp, loud, or horrid noise, he is not likely to sleep again that day or night. Guard against waking a patient soon after going to sleep; if he has been asleep two or three hours, it will not be so bad. It is a curious fact, but one easily accounted for, that if a patient is waked after two or three hours of sleep, he is much more likely to go to sleep again, and sleep well, than if waked after a few minutes of sleep, or any time short of an hour. A patient, therefore, waked in the early part of his sleep, loses the power to fall asleep again. A person in health who allows himself to sleep in day time, will be unable to sleep at night. Not so with the sick, but the reverse, as a general thing; the more they sleep, the more and better they will be able to sleep. When your patient, therefore, is sleeping, guard especially against sudden and unusual noises, and every thing that would be likely to wake him, during the early part of his sleep. After he has slept two, three, or more hours, it is not so important.

A good nurse will see that the door is not suddenly slammed; that doors and windows do not creak in opening and shutting; that noisy children are kept out of the way; and that no unnecessary noise of any kind is permitted, in the room or on the premises. The exercise of a moderate degree of common sense is all that is required in this, as in most other matters.

Decision — Punctuality. — Conciseness, decision, and punctuality, are of the greatest importance with the sick. Whatever your doubts or your hesitation, never communicate it to them, never let them know or see any symptoms of it in what you say or do. "Let your thoughts and your words to them be concisely and decidedly ex-

pressed. Let your doubt be to yourself—your decision to them." People who can not keep their thoughts, their doubts and apprehensions to themselves, and can not keep from showing them even in their manner, looks, and answers, ought never to be with the sick. If you have any doubt of the patient's recovery, you should not only not say so to him, but you should not show it in any thing you say or do, or fail to say or do. You should not hesitate, nor evade, nor appear undecided. If you do, he will interpret it as unfavorable to him, and your hesitation, or seeming indecision, to a want of courage to tell him what you really think. Give him no reason to suspect any thing of the sort in you. Whatever you say, whatever you act, whether favorable or unfavorable, let it be concise, decided, and without equivocation—showing by your manner that you believe what you say. Irresolution is one of the things that all patients dread. It is better to tell the worst than to hesitate and show irresolution. A patient will stand any thing better than irresolution in an attendant.

When you leave a sick room, or when you come in, do so quickly; not suddenly, not with a rush; but do not hesitate. Don't let the patient be wearily waiting for you to go out or come in. These suggestions will apply to visitors as well as to nurses. How often do visitors loiter and hang about the door, or bed of the patient, after they have risen to leave, talking either to the nurse, members of the family, or the patient, all the while going, but still do not go. All this is terribly annoying to a patient, and, of course, injurious.

Punctuality, on the part of a nurse, is of the utmost importance; punctuality in every thing she has to do, or to see to, or that she may promise to do. If a patient has to keep watch or remember when it is time for him to take medicine, and has to tell his nurse, he might be nearly as well off without a nurse. The patient should have no concern nor anxiety about the matter; he should be made, by the punctuality of his nurse, to feel and know that all will be properly and punctually attended to, without his giving himself any concern on the subject. So with giving him his food. So with every thing. Do not let a patient think that he is neglected, or his wants forgotten. How often is it the case that a patient will ask, "Is it not time I took another of those powders?" or of something else, as the case may be, and the nurse, or person in charge, will say, "Oh! I declare I forgot; it's now half an hour past the time." Such things are common; and yet they are most reprehensible. They are cruelly and wickedly wrong, and may do positive, irreparable injury to the patient, besides cause him to lose all confidence in the nurse. By all

means, be punctual and exact in giving medicine, "according to directions."

If you go out to be gone a specified time, tell your patient just how long you will be gone, and return at the time you say you will. It will frequently happen, as a matter of course, that a nurse must go out to be gone some time. In such cases she should always inform the patient about it, telling him just how long she will be gone, when she will be back, etc., no matter how long or how short the time may be. Never deceive a patient by slipping away without letting him know it, nor by staying longer than you tell him you intend to. Do not say you will be back in a few minutes, and then be gone all day or all night. Anxiety, apprehension, waiting, uncertainty, disappointment, being deceived, surprised, frightened, and the like, are all to be carefully avoided, if possible, as they may do a patient more harm than any amount of physical exertion. It may occasion a relapse, and set the patient back days or weeks, and perhaps endanger his life.

Be punctual in little things as well as in big things. You will then soon inspire in your patient confidence in you, so that he will rest easy at all times, feeling sure that you have his interest and welfare at heart, and that you will take care of him. He will then not be afraid to go to sleep for fear he will sleep too long and forget to take his medicine, or that something will go wrong. Punctuality, let it be understood, is one of the most important qualifications of a good nurse.

When you speak to a patient, or talk with him, always do so in front of him or in his view. Never talk to him in such a way that he has to turn his head to see you. Every body involuntarily looks at the person speaking, or desires to do so. Though it may be painful to a patient to turn his head, yet he will do so, if it is necessary, in order to see you when you talk to him. He should never be compelled to do so.

And if you are holding a conversation with a sick person, especially if on business or upon a subject which is of interest to the patient, always sit down, and, of course, in the patient's view. If you stand, very likely the patient will have to be continually raising his eyes in order to see you, which may be nearly as bad as having to turn his head round for that purpose. Besides, by standing, you are apt to appear in a hurry, and would like to get away as soon as you can. If the conversation is at the request of the patient, if he has something to communicate, to command, or to talk about, by all means sit down, give complete attention and full consideration to what he has to say, and then go away the moment the subject is

ended. Few things are more wearisome to a patient than to be asked to repeat something he had carefully said before — as, "What did you say?" and the like; wholly owing to a want of attention on the part of the listener. Such things are provoking to a well person; but to a sick person are absolutely injurious as well as annoying.

Importance of Change and Variety. — Few persons, perhaps, unless it be old, experienced nurses, are aware of the importance of variety to patients — especially to those long confined to a sick room — variety of scenery, of objects to look upon; changes of the position, of the bed, of the furniture in the room; new and pleasing objects to look at, as engravings, paintings, flowers, and the like.

Very often a change of room, where a patient can bear to be moved — especially for convalescents — will be found of great benefit. And the beneficial effects of beautiful objects, and of a variety of objects, especially of brilliant colors, to persons long confined to the monotony and sameness of a room, can hardly be appreciated by persons in health, and free to come and go as they please. And when patients crave a change — some little alteration or rearrangement of something in the room, which to us may seem very trifling, the moving of the bed to another part of the room, or near the window, or turning the head in another direction, or desire some trifling object to look at — we are too apt to say it is a mere "fancy" of the patient, and treat it with indifference or levity. Patients, doubtless, have what we call "fancies," but such fancies are often the most valuable and certain indications of what they really need, and what, trifling as they may seem to us, would greatly aid in their recovery. It would be well, indeed, if persons in charge of the sick, would watch these so-called "fancies" more closely, and, as a general thing, give heed to them more than is usually done. Patients often crave what they should not have to eat, but a change of position, or something pleasant to look upon, will frequently be of essential service. The voice of Nature — generally a safe criterion — may well be heeded.

Miss Nightingale, speaking of this subject, in her book on *Nursing*, says: "I have seen, in Fevers — and felt, when I was a patient myself — the most acute suffering produced from the patient not being able to see out of the window, when the view to be seen was nothing but a clump of woods. I shall never forget the rapture of patients over a bunch of bright-colored flowers. I remember, in my own case, a nosegay of wild flowers being sent me, and from that moment my recovery became more rapid. People say the effect is only on the mind. It is not so. The effect is on the body, too. Little as we know about the way in which we are affected by form, by color, and by light, we do know this, that they have an

actual physical effect upon the body. Variety of form, and brilliancy of color, in the objects presented to patients, are actual means of recovery."

Of course, the mind and the eyes should not be overtasked. The variety presented should be *slow*, as well as pleasing. If you show a patient a great number of engravings, for instance, in quick succession, the beneficial effects are apt to be lost; and not only so, but actual harm may be done. Two chances to one the mind will become wearied, confused, and the patient become indifferent, faint, feverish, or even sick; but give him one, or hang one up where he can see it, one each successive day, and the variety will be pleasing and beneficial.

Do not be afraid to place shrubbery, plants, and bunches of cut flowers in the patient's room. There is a "learned ignorance," common among nurses and physicians, that such things are injurious, on account of the carbonic acid they are supposed to give off. Of course, if you should fill a room, like a hot-house, with plants and flowers, some evil effects of this kind might be expected. Besides, plants only give off carbonic acid at night; and even if they should be left in the patient's room at night — which is not at all necessary — the amount that would be given off by a good sized plant, or bunch of flowers, would hardly poison a fly! As to cut flowers, the actual effect is the reverse of that feared; if they are placed in a tumbler or vase of water, as they generally should be, they absorb carbonic gas, decompose water, and give off oxygen gas — which is a healthy process.

Some flowers, of course, are not healthy; the Lily, for instance, the smell of which is said to depress the nervous system; so of the Jessamine, and some others. Nobody would be likely to bring into a sick person's room a bunch of Jimson blossoms (Stramonium), nor any flowers that had a disagreeable, faintish, or sickening smell, though they might be ever so handsome and brilliant. But the Rose, the Pink, the Geranium, and such flowers of grateful smell, are beneficial on account of their healthful and agreeable fragrance, as well as on account of their beauty and brilliancy of color. Brilliant colors are to be preferred; and while red is perhaps the best color, blue is the poorest. Blue seems to be a depressing color to the sick.

Well persons vary their own employments and objects of attention several times a day; yet they will let a poor bed-ridden patient lie day after day in the same room, staring at the same blank, dingy walls, without any change of objects about him, without any variety to enable him to vary his thoughts. A patient can just as easily move his leg when broken, as change his thoughts when no external

help from variety of objects is given him. This neglect of the wants of the mind is one of the main sources of suffering to the sick. Well persons are too apt to overlook this matter, and to charge patients with being "peevish," and "fretful" — "not knowing what they want," or "what is good for them;" to say that they "ought to have more self-control," and should "dismiss painful thoughts" and "foolish longings," which only "aggravate their disease," etc. All such talk and feeling as this arises either from gross ignorance or cruel indifference, either of which unfits any one for taking care of the sick. Almost any sick person, if he behaves but decently well, exercises more self-control, every hour and day, than one in ten of well persons, and more than any one can ever know till he is sick himself.

Suppose you are up all night, and instead of being allowed your cup of tea during the time, or your cup of coffee in the morning, you are told that you ought to "exercise more self-control," what would you be likely to say? The patient's diet may be well cared for; it is not hunger that troubles him, except hunger of the mind. The nervous system is out of order; the mind wants relief, or exercise. This state of mental suffering, of ennui, and weariness of both body and mind, can often be relieved by a little care in affording a pleasant view, an agreeable variety of objects, and of pretty things to look at. How often do patients crave the "return of day!" This is generally nothing but a desire for the light of day, the remembrance of the relief which a variety of objects before the eye affords to the harassed sick mind. How sensible is the relief, when sufficient strength has returned for a patient to be allowed to do a little sewing, or knitting, or writing, or any little labor; it relieves the mind, and improves the body, at the same time! Bear in mind that you have all these varieties of employment, and much more, while the sick can not have them, and then bear in mind and try to obtain for them all the pleasant varieties which they may innocently enjoy.

On Food for the Sick. — The most difficult part of Nursing, or taking care of the sick, is that in regard to their diet — in knowing what food to give them, in being able to furnish it, in knowing how to prepare it properly, and when to give it. There is a vast amount of ignorance upon this subject among professional nurses and people generally.

One of the most common errors which a physician meets with in his practice, is the idea, which seems to prevail especially in the country, that as soon as a person is taken sick he must commence being stuffed and gorged with food at once. How common is it, after the physician has examined his patient, prescribed, given di-

rections, and is about to leave, for the anxious mother, sister, or friend in attendance, or several of them together, to ask: "What shall he eat, Doctor?" "What can he eat?" "How often and when may he eat?" And "Will it hurt him to eat this thing or that thing?" and various questions of that sort — showing generally a greater concern about the patient's eating than about his taking medicine, or being subjected to proper treatment in other respects. This is a great error, and sometimes does harm; yet it is one that can easily be pardoned. It flows from the purest and best feelings. Every body knows that the well live by eating, and it is but natural to suppose that the sick must do the same; that when persons become sick they can not, perhaps should not, eat the ordinary food of well persons — hence the desire and anxiety of the friends of the sick one to find out what he can or can not eat. It is always right and desirable that nurses, and all who have the care of the sick, should find out and understand (indeed it is one of the highest and most important duties) what is proper for their patient to eat, how to prepare it, and when to give it. I say nothing against this, but, on the contrary, commend it as a matter of the first necessity. But it is a mistaken idea, this over anxiety on the subject, that the patient must at once commence eating something, and must continue to eat about the same amount which he would were he in health.

There are more patients and sick persons injured, and consequently more lose their lives, from eating too much, and what they ought not to eat, than from abstinence or not eating enough. Except in military hospitals on battle-fields — perhaps in some badly managed hospitals of other kinds, and among the extremely poor classes in our large cities — patients seldom ever die for want of enough to eat. Nevertheless, it is not to be denied that the sick often suffer, in the midst of the greatest abundance, on account of the ignorance of those who have the care of them, in not knowing how to prepare their food properly, or just what kind of food to prepare, or how and when to give it; and sometimes, perhaps most frequently, on account of the negligence and indifference of nurses. But patients seldom die for want of enough to eat; while many, Fever patients especially, and those suffering from most acute diseases, are injured more from eating too much than too little. "Starve a Fever and feed a Cold," is an old saying, and there is wholesome truth in it — especially in the starving part.

When the friends of patients have asked me the usual questions I have named, as "What can he eat?" and the like, my usual reply has been: "What he wants to;" and, as a general thing, "When he

wants to." "Never urge a patient to eat; do not crowd food upon him; he will know better than you when he needs food; his appetite will tell him. As to what he should eat—in that, too, he may know better than you. If he asks for any particular thing, if he craves it, the chances are that it will not hurt him, but do him good. Use your judgment. The diet should, of course, be light, nourishing, and of easy digestion. If you know it would be injurious, of course, don't give it to him; if you have serious doubts, withhold it; otherwise give it to him if you can. But all the while recollect that the patient does not and will not need much food." This will apply to all cases of acute disease—to Fevers, Inflammations, Diarrhea, and the like. In chronic complaints, or diseases of long standing, where there is little or no Fever, the rule will be somewhat different. A light and abstemious diet may not be, in fact is not, so necessary. When persons are first taken down sick with Fever, or any other acute disease, they seldom want to eat any thing for the first few days, and it is very natural and proper that they should not. Food then, especially if it be strong or difficult of digestion, would do them absolute injury; and indeed any food might do more harm than good. In such cases, and at such times, food should never be urged upon a patient; he should never be persuaded or induced to take food against his wish. To do so is pernicious in the extreme; it is cruelty to the patient, though done out of kindness and extreme solicitude for his welfare, as ten chances to one it would only aggravate the disease. In cases of recent attacks of Fever, or acute Disease of the Bowels, one or two ounces of food, especially animal food, urged upon a patient, simply because it is thought he ought to eat something, is likely to do more harm than for him to go without a particle of food for three days. Indeed the abstinence of food for that time, or even longer in some forms of acute disease, might be the best possible way to save the patient's life! The best rule, in all cases of recent or acute diseases, is *never to give the patient food unless he desires it;* and then to *let him have what he wants or prefers, if you know it can not hurt him.* To be able to comply fully with this latter part of the rule, will require some knowledge and judgment on the part of the nurse; but it is only a knowledge and judgment which all who have the care of the sick, should possess.

Nevertheless, it can not be denied that patients often suffer for want of food, and that in the midst of plenty, from the ignorance of those whose duty it is to see to their wants, and from negligence and inattention to the manner of preparing their food, and to the proper times and manner of administering it. It requires judgment and skill often to know how to prepare suitable food and make it palatable, or

even endurable to the patient; to know what sort of food, whether solid or liquid, vegetable or animal, is suitable to the condition of the patient; what hour of the day, whether morning, noon, or evening, a certain kind of food is most suitable; and when and how to give food, in what quantities, and in what manner, so as to be most suitable and acceptable to the patient. To know all this beforehand, as a matter of professional knowledge, applicable to all cases, of course, is impossible; but the ingenious and attentive nurse, with the ordinary knowledge which every nurse ought to have and may easily acquire, will soon find out—all she lacks of knowing—by experimenting, and by close attention to the condition, the tastes, the peculiarities, the likes and dislikes of her patient.

With a majority of weak patients, for instance, those who have been sick for a good while, it is often impossible or very difficult for them to take any kind of solid food in the morning; and if they should have nothing else offered them but solid food till noon, or afternoon, they still might be unable to take it, from exhaustion caused or kept up by continued fasting. Hence, an ignorant nurse, who saw the patient eat very well and very heartily for his dinner, the day before, of solid food, might think it all a whim if the same kind of food were declined by the patient next morning, and might undertake to "bring him to his appetite," by making him wait until he was willing to eat that! Weak patients are generally feverish at night, and consequently are weaker in the morning, have dry mouths, difficulty of swallowing, feeble digestion, and little or no appetite. They can not *eat* under such circumstances; but they may take a little liquid food or nourishment, as Beef Tea, warm Milk and Water, or Tea (sweetened), Chicken Broth, and the like, and gradually a little more, until by dinner time they may be able to take a good meal of something more solid and substantial. But an ignorant nurse could not comprehend why a weak patient could not as well take a certain article of food as well one time in the day as another—as well in the morning before eleven o'clock as from two to seven o'clock in the evening; and a careless, indifferent nurse would not care to inquire, or go to the trouble of preparing the proper nourishment and giving it in the proper manner, if she knew what was necessary and the reason why it was necessary.

Again: A nurse may be ordered to give the patient say a teacupful of a certain article of food every three or four hours; but the patient can not bear it given in that way; his stomach rejects it. What, then, is to be done? The intelligent nurse will know at once, or at least will try some other plan. Give it in smaller quantities, and at shorter intervals—a table-spoonful every ten or fifteen minutes, or

every half hour; and if this will not do, a tea-spoonful at a time, for a while at first, until the stomach becomes strengthened and able to bear more. The idea is, that the patient should take that quantity — a teacupful — every three or four hours; and if he can not take it all at once, give it in such quantities as he can bear, and make up the quantity within the time by short and frequent repetitions. There can be no doubt but patients are often lost through ignorance and the want of a little ingenuity and care on the part of nurses and persons in attendance, in regard to these seeming little, yet most important matters; and this is more often the case in private nursing in families than in public hospitals.

Punctuality, too, in giving food, is of the utmost importance. With very weak patients, life itself may hang upon a few minutes. A spoonful of nourishment, given at the right time, may so revive the patient as to turn the scale when almost balancing between life and death, as to save the patient's life; whereas, if it had been delayed ten or fifteen minutes longer, it might have been too late! Life often literally hangs upon a few minutes; and it may be as true of food as of medicine or a surgical operation, that a little, applied at the critical moment, or in time, may save the patient's life. Where patients are very weak, therefore, and can take but a little nourishment at a time, it is of the utmost importance that it be given with scrupulous selection and punctuality. "The consulting the hours when the patient can take food; the observation of the times, often varying, when he is most faint; the alternating the periods of taking food, in order to anticipate and prevent such times of faintness — all this and such like, which requires observation, ingenuity, care, and perseverance (and these really constitute the good nurse), might save more lives than any of us are aware of."

Another thing I would speak of, and only to condemn — and that is the habit of leaving a patient's food standing by the bedside or in sight of the patient, in hopes that he will eat it by and by. Very often, when food is taken to a patient, and he can not or does not eat it — perhaps can not touch it — it is left standing by his side, so as to be ready for him, thinking he may eat it in the interval betwixt that and the next meal time. Nothing could be more improper. It is calculated to disgust a patient with food, and render him unable to take any at all. Always bring food to a patient at the right time, when he should eat it or is ready to eat it, promptly and punctually; but whether he eats part of it or none of it, never leave it standing, with the idea that he may always have something by him to eat, unless you wish to disgust him with food of every kind.

If it be found, as often it will be, that a patient can not take food

at the regular or usual hours, you may very likely ascertain at what times he could take food, by simply asking him such questions as, "Are there not times when you feel that you could eat a little? Some hour in the twenty-four, either day or night, when you feel an appetite, or when you could take a little food, if you had it?" Many a patient's life has been saved, just in this way, by the physician, or the careful nurse, appealing to the patient himself to fix the time for taking food. But it is not always that patients themselves can tell this, especially if they are very feeble, and it is the duty of the nurse to watch and find out by constantly trying expedients.

It is believed to be a good rule not to talk much about eating, and about various and different articles of food, in the patient's presence or hearing. It is calculated to distract or divide his mind as to articles of diet, to render him capricious, and perhaps disgust him with all food. And it is especially a bad habit to cook food in the patient's room — or for the nurse or others to eat in the room, or to exhibit articles of food to the patient between meals — and particularly raw or uncooked food. Patients will often become disgusted with food of all kinds just from seeing others eating in their presence; and also from being too near the cooking operations, where they can smell the flavors of the kitchen.

If a patient is able to take his food without assistance, that is, able to feed himself, it is always best to let him do so, and leave him to enjoy his meal alone as much as possible; and if he has to be fed, it should be done without talking to him or allowing him to talk much while eating — especially about food. Talking by a patient immediately before the time of eating, especially if on an interesting subject, or matter of business in which the patient is interested, will often destroy his appetite or ability to take food. So, too, the good effects of food may be diminished or entirely destroyed, by causing or permitting the patient to talk upon some exciting subject too soon after eating. All these may seem to be little things, trifling and of no consequence; but they are, nevertheless, often of the greatest importance. It is the careful attention to the "little things," as they are generally regarded, that constitute the great secret of good Nursing.

About the Kinds of Food. — It can hardly be expected that detailed and specific directions in regard to the particular kinds and articles of food, for the sick, and the proper or exact way of preparing them, to meet every case and condition, can be given in a work like this, or indeed laid down in a book at all. Such a thing is not possible; neither is it necessary nor desirable. The most we aim at is to give some intelligent hints, and to lay down some general rules and observations, that may be useful by being easily understood and

applied by the common reader, and by persons of ordinary intelligence, who may have the care of the sick.

As to what is proper diet for the sick, there are a few plain, simple, general rules that should be observed. They cover the whole ground, and may be understood by all — the common, inexperienced reader, as well as the intelligent, experienced nurse; the farmer's wife, as well as the learned physician.

The first and most important and most general rule is that the diet should be light; it should be harmless, unexciting, and easy of digestion. And it must be more or less light, weak, and easily digested, according as the patient is more or less feeble, and according also to the character of the disease. A patient, for instance, with Diarrhea, Dysentery, or Inflammation of the Stomach, would require much lighter food, and given with greater caution, than one suffering with Consumption, though the Consumptive patient might be much the weaker and more feeble of the two; while a patient suffering with Fever, might be better without any food, or a very little, for a day or two.

In the second place, food for the sick should be nourishing. Not strong, not hearty, nor gross, nor exciting, but nourishing and strengthening. This is reasonable. As a general thing, sick persons at best can take but little food, and hence the greater reason that what they do take should be of a character to afford as much nourishment as possible. Yet it would not do to give the most nourishing and strengthening food, that is, such as would be the most nourishing to a well person, for that would conflict with the first rule, that the food should be light. The patient's stomach could not digest it; or, if it could, it would likely do him more harm than good. A pound of Beef, well cooked, would be more substantial and nourishing than as much boiled Milk; yet the former might kill the patient, while the latter might save his life.

As a general thing, too, the diet of the sick should be mainly of a vegetable character; not by any means exclusively, but mainly; and this to be governed by circumstances, and the condition of the patient. Meat Broths, Soups with more or less of the juices of meat in them, and for very weak patients, Beef Tea, are often most excellent, being both nourishing and palatable, and at the same time sufficiently digestible.

The liquid form, or semi-liquid, will be found also to be the best form, as a general thing, in which to administer food to the sick. A majority of patients prefer Soups, Broths, and Liquid Food, while also in a majority of cases this is the best form.

And here I would remark that Milk, in its various forms and in

connection with the various preparations into which it enters as an ingredient, is probably the most important and most useful single article of food there is for the sick. Milk is the diet of babies, the diet during infancy; when the youth and the strong adult become sick, smitten with disease and prostrated on a bed of pain, they become as little children; the system is enfeebled, the stomach and digestive organs are weak and inactive, and consequently their food, while in such condition, must correspond to their ability to digest and assimilate it, and to the actual requirements of the physical system for sustenance; it must, as compared with the healthy man's food, be weak, light, unexciting, and easily digested and assimilated. Hence Milk is a most important article for the sick. It can be used in so many ways, and can be made an important ingredient in so many preparations for the sick, and is, withal, so nourishing and so well adapted to the tastes, wants, and capabilities of almost all patients, young or old, that it may well rank as the leading article in the diet of the sick.

In many forms of disease, and especially in Bowel Complaints, there is no better diet than boiled Milk and Flour — "Thickened Milk," as it is generally called in the country; Milk boiled and thickened, by stirring in while boiling sufficient Wheat Flour to make a kind of thin Mush. It is very palatable, and agrees with almost all stomachs. It is often used as an article of food for well persons. A little Butter may be added, if taken warm, or Sugar, or both, as may be preferred. And if the patient is very weak, instead of using pure Milk, it should be weakened by adding a portion of Water, more or less, according to the strength of the patient.

Gruel (which is a thinner article than the above) may be made with Milk, or equal parts of Milk and Water, and may be made by using either Wheat Flour or Corn-meal. Gruel is frequently made of Corn-meal and Water, by stirring in a little Meal while the Water is boiling. It requires but little Meal, as it should be thin enough to be drank by the patient. A little Salt should be added to season it. When properly made, Gruel is a very agreeable and pleasant diet. It is light, cooling, unexciting, easily digested, and nutritious. I always prefer it made of Corn-meal, and with not a greater proportion of Milk than one-half; that is, equal quantities of Milk and Water. A less proportion of Milk will often do.

While on the subject of Gruels, let me say that one of the best things in cases of Dysentery, or Flux, and in Bowel Complaints generally, is Flour and Water: that is, Flour stirred into Cold Water until it becomes a thick Gruel, about the consistency of thick Cream, and then let the patient take as much as a teacupful three or four

times a day, or more than that quantity if he can take it. It acts both as Food and Medicine. For Dysentery, where the Mucous Membrane of the Bowels is inflamed, sore and tender, this mixture of Raw Flour and Cold Water is a most admirable remedy. It acts upon the inner surface of the bowels as Raw Flour does when applied to the abraided surface of Burns; while the nutritious portion of it is taken up and distributed through the system, and acts as nourishment. It may be given in all cases where there is more or less looseness of the Bowels.

There is some nourishment, perhaps, in a cup of Tea; at any rate some people, especially the English and the New Englanders, seem to think so. When they are sick they can not get along without their cup of Tea. There is more nourishment in it if well sweetened, and still more if a good proportion of rich Milk, or of good sweet Cream is added. There is a large amount of nutriment in Sugar, and where patients like Sugar, or sweetening in their food or drinks, it is generally well to let them have it. And it is always well to use a liberal portion of Milk in their Tea, Coffee, and other preparations of diet, where it can be done. But, as a general thing, the Milk should be boiled before using. Sweet Milk is somewhat feverish, if taken raw, or without being boiled or scalded. It is not enough to add it to boiling hot Tea or Coffee; the Milk itself should first be brought to a boil. Especially should this be done in all cases of Fever patients, and where every thing calculated to excite Feverish symptoms in the patient should be avoided.

With Sour Milk, the case is different. It is not, like Sweet Milk, apt to produce Feverish symptoms, but, on the contrary, is cooling, refreshing and nutritious. I can not agree with those who condemn the use of sour and "turned" Milk, as being injurious to the sick. It is not so. In many cases it is preferable to Sweet Milk, especially when the patient craves it. You need not, as a general thing, be afraid to let a patient have Sour Milk, if he desires it, asks for it, or craves it — unless some special or peculiar condition of his system forbids it, let him have it. In nine cases out of ten, it will not only not hurt him, but will do him good. Buttermilk, especially, is, in most cases, a healthy, cooling, and refreshing drink. And what is better, what more delicious and palatable, than a dish of nice, cool, thick, or "Clabber" Milk? How often, after suffering with burning, wasting Fevers, and beginning to grow better, have patients craved a drink of Buttermilk, or Clabber Milk, or even ordinary Sour Milk? And who has ever known a case where the gratification of such desire has proved injurious? I might ask, indeed, who has ever known a case where it did not prove beneficial? Of course, modera

tion and judgment must be used; the patient must not be allowed to take too much, to overload his stomach, and thereby induce Feverish or other injurious symptoms — a thing that may be done with the most innocent article of drink or diet. It is not true, I affirm, that Sour Milk is injurious. Those who say it is, do not know what they are talking about. I do not say it is the most healthy thing in the world; nor that it is more healthy than fresh Milk, though in many cases, in Fevers, and as a drink for invalids, it is preferable to Sweet Milk. Not as an article of diet, nor on account of its nutritious qualities, but simply as a drink, as a cooling, innocent and refreshing beverage, answering both as food and drink, where such an article is indicated. It is never to be given, however, unless desired by the patient. I have felt its beneficial effects in my own case often, and have witnessed it in others in hundreds of instances, and I do not recollect of a single instance where its use had an injurious effect. Therefore, I say, if patients desire a little Sour Milk occasionally, as a drink, whether it be Clabber Milk, Buttermilk, or simply "turned" Milk, let them have it, if you can. Mulled Buttermilk, that is boiled, is also a good thing, if palatable to the patient. It may be taken warm or cold; but is usually taken warm. It may also be sweetened. It is an article good for both sick and well.

As I have already said, it is impossible to lay down in a book strict rules of diet for the sick, as to what particular articles are to be used. The physician can not always tell what is best; neither can the best nurse. The patient's own "fancies" and tastes will often be the best guide. Always keep in view the general rules and ideas, as to the character of the food for the sick; that it should be mild, light — not animal — mainly vegetable or farinaceous, unexciting, nutritious, and easily digested, and then trust to the guidance of the patient. Consult his tastes, his fancies and desires, and you will hardly go amiss.

I have also said that, as a general thing, or in a majority of cases, liquid food is preferable. By that, I mean that patients will generally themselves, prefer their food in that form, and for the reason, undoubtedly, that it is better suited to the wants of Nature, to the condition of the patient — being easier swallowed, more palatable to the taste, and easier assimilated or digested. Hence Soups, Broths, and nutritious Teas, will constitute a large proportion of the proper diet for the sick. Chicken Soup is one of the most common, as well as most useful and beneficial of the various kinds of Soups. Of course, it is not necessary to give any directions here as to how it should be made. Every nurse, every cook, and every good housewife in the country, knows how to make Chicken Soup. All the rule necessary to observe, is to be careful and not make it too strong, too rich; but

to gauge its strength according to the strength or condition of the patient. Remember, that in all recent cases of sickness, and in acute forms of disease, the great danger on the part of nurses and friends of the patient is, that they will feed too much; that they will do more harm by over-dieting the patient than by under-dieting; that they will give too strong or too much food, or give it too often, rather than too weak, too little, or not often enough. In all acute diseases, therefore, and recent attacks, it is always better to have the food weak rather than too strong; and better to starve the patient a little, than to feed him too often or too much. Beef, and other Meat Soups, should not be too strong and rich; and you should never urge the patient to eat more than he wants.

Certain Vegetable or Farinaceous Soups are well adapted to the wants of the invalid, or Soups partly vegetable and partly of meats, as Chicken Broth with boiled Rice. This makes an excellent diet in all ordinary cases. Barley is also a good article to put into Soups. It is mild, easily digested, and very nutritious. Some persons, whenever they get sick, want Onion Soup, or some sort of Soup with Onions in it. Where patients like the flavor of Onions, and prefer to have them, it is always well to accommodate them. Onions possess strong medicinal properties, and though the substance is difficult of digestion, the flavor of the Onion can do no harm, and may do good. It is a healthy seasoning for Soups, for the sick or the well. (The reader is referred to the numerous valuable "RECIPES FOR PREPARING FOOD FOR THE SICK," which will be found following this treatise.)

On Beds and Bedding.—There is probably more injury done to the sick — especially those who are confined most of the time to their beds — through the ignorance of nurses in regard to the bed, than in perhaps any other one thing. What sort of beds are those — especially in the country, and in private houses generally — on which the sick are confined? Look at the number of mattresses! Did you ever count them, and think of the matter? Two or three thick, heavy mattresses, possibly, and sometimes more! And these mattresses remain, just as they were at first, with an occasional "shaking up" of the top one, perhaps, from the time the patient is first taken down, until he quits the sick room.

The careful and thoughtful nurse is very particular about *airing the sheets*, every day. But are the mattresses ever aired? ever changed? Of course not. This is a matter often not thought of.

A mattress will soon become saturated with the unhealthy, poisonous emanations from the patient's body; from this arises a dampness, a moisture, either cold or warm, as the case may be, which returns upon the patient, to be inhaled and absorbed into the system;

and this unhealthy process, perhaps, is kept up during the whole course of his sickness.

It is not enough, therefore, to "air the sheets" well. A patient should not be allowed to lie on the same mattress more than forty eight hours at a time; twenty-four hours is better. It should then be exchanged for a fresh, clean, well-aired one; while it should be subjected to a thorough airing and sunning; not slipped *underneath* another, on the same bed, as is sometimes done! I have already said something about the criminal habit of leaving the chamber-vessel *under the bed*, with its contents in it, perhaps uncovered, to saturate the under mattress with its poisonous effluvia and exhalations. Suppose there are two mattresses on the bed, with the chamber-pot beneath to saturate the under one, and the patient, with the exhalations from his body (which are passing off every hour), to saturate the upper one — how long do you suppose a patient can thus remain, with mattresses unchanged, with safety? No wonder some patients recover slowly, and often have "backsets." It is more important, vastly more important, that the mattresses, all of them, be frequently changed and aired, than that the sheets be; and for the reason that they will catch and contain vastly more poisonous effluvia and dampness than sheets will, and will give it off again, to the great injury of the patient. The exhalations from the patient's body are constantly passing off, by insensible perspiration, and often by sensible, and gradually and constantly passing into his bed; until, if the same mattress is used for several weeks, without change or airing, it may become a reservoir of pestilence, and endanger the very life of the patient — notwithstanding he may have clean, well-aired sheets every day! Nurses, and all who have charge of the sick, therefore, can not be too careful about this matter. Change the mattresses often, and let them be well and thoroughly aired, sunned, if possible, and dried; and if necessary — if any filth has got into them — let them be opened, picked to pieces, and dried, before using again.

All beds, whether for sick or well, should be so arranged and situated, that the air can pass under them freely. There should, of course, be no valance or curtain around them. As pure air as it is possible to get in a sick room should be allowed to pass under and reach the lower mattress, all the time; while the upper one should be exchanged and aired at least every other day, when the bed is occupied by the sick. This is especially necessary and important in all cases of Fevers, and low, debilitating diseases, and diseases of the Lungs and Bowels.

It is thought by many that a wide or double bed is preferable for

a sick person, as it gives the patient the advantage of changing occasionally from one side to the other. It is far better, however, that the patient, instead of being changed from one side of a wide bed to the other, be removed into an entirely different bed. Hence it is better to have narrow, or single beds for patients, and change them frequently from one to another, and in that way secure an entirely fresh, well-aired, clean, and dry mattress, every time the change is made.

As to the arrangement or location of the bed, I would say that a patient's bed should never be placed *in the corner* of the room (a very common custom, especially in the country); neither should the *side* of the bed be placed against the wall of the room. In the first place, a bed in the corner can never be well aired or ventilated; and the same objection holds good, to some extent, against the custom of placing the side of the bed against the wall. But, in the second place, it is often very necessary and important that the attendants on the sick be able to approach readily *both sides of the bed*, which can not be done if the bed is in a corner, or one side against the wall. The better way is to place the bed well out in the room, away from any wall; or if not this, then with one end — the head-end preferable — to the wall. This will enable the nurse to approach readily either side of the bed, and will give the patient and the bed the benefit of a better ventilation and some chance to get a little pure air, if there is any in the room.

Another important thing is the fact that the patient's bed should be in as light a part of the room as possible, without being directly in a draught, or in the sun. Instead of this, however, the bed is very generally stuck away in a corner, and in the darkest part of the room! Light, as I have already said, is essential to health, and is essential, also, to the speedy recovery of the sick. Let the patient's bed, therefore, always be placed in a part of the room where there is a full share of the light of day.

It may be well to say a word in regard to the hight of beds, for the sick; and what I say will apply equally to beds for the well. It is very common, in the country, to have high bedsteads, and then on top of these two or three thick mattresses or straw ticks, and on top of all a thick feather-bed. This brings the patient *too near the ceiling*. Beds should be moderately high; not exceeding, however, eighteen inches or two feet to top of the upper mattress. If the patient is too high, or very high, especially if the ceiling is low, he will be above the current of fresh air, and in that which is heated and impure. Care should be had also not to have the bed too low, or the patient will be in the cold, damp, and equally unhealthy stratum of air and

effluvia which settles near the floor of the room. The best criterion to go by is to have the position of the patient as near as possible on a level with the throat of the chimney or upper part of the mouth of the fireplace of the room, as he will then be in the current of the freshest and best air in the room. The convenience of the patient in getting in and out of bed should aiso be taken into account. If the bed is very high, it will be the more difficult for him to get out and in, and will worry him more than should be the case, in performing such exercise. I merely hint at this matter, and leave it to the good judgment of those who have the care of the sick, which will generally lead them right, in matters of this kind, if they will but obey it. These may seem to be but small and trifling matters to those who have not given the subject much attention, nor inquired into the reason and philosophy of such little things; but they are, nevertheless of great importance to the sick, and really go to make up the essentials of good Nursing.

The matter of bed-clothes, blankets, covering, etc., is one of the greatest importance to the sick. It is very common, for instance, to place patients on thick woolen blankets, because they are soft and warm. This may be well enough in cold weather, and for patients that have not been long confined to the bed. But if the patient is "bed-ridden," as it is termed, that is, has been long confined to the bed, and there is a likelihood of Bed Sores, or, in reality, the patient has Bed Sores, then a blanket should never be placed under him, nor any thing of the nature of a blanket. A blanket, or thick cotton comfort, will accumulate and retain the moisture which escapes from the patient's body, and will thus "act like a poultice," breeding Bed Sores, and making them worse where they exist. For patients with Bed Sores, a nice, fresh, loose straw mattress, in a linen tick, with a sheet over it, will serve a good purpose. But by all means keep thick, heating blankets and comforts from under patients with Bed Sores. An India-rubber bed, filled with water, has lately been introduced, and is the best bed possible for bed-ridden patients.

Thick cotton comforts and stuffed counterpanes and quilts are also bad for covering. They are impervious to the circulation of the air, and the breath and exhalations of the patient. They will gather and retain the moist exhalations and dampness from the patient, and thus become extremely unhealthy and injurious. Besides, they are too heavy for weak patients. There is nothing so good for a covering to sick persons as a clean, light, thin woolen blanket — one that will allow the moisture and exhalations from the patient to pass through it. If this, with a sheet, is not sufficient, add another blanket, or a thin porous spread. But be careful about piling on thick, impervious,

air-tight coverings. It is better to leave the patient too cool, than to oppress him with such coverings as the latter.

There is another very common error — I may say, evil — which I would guard all against — and that is, placing or propping up the patient's head too high, by piling the pillows on top of each other. The best criterion, perhaps, is to consult the patient's ease and comfort in this matter, where the patient is intelligent and in a condition to decide for himself. But this can not always be relied on. There is often much injury done to the sick by placing the pillows too high, thus throwing the head up and forward on the breast, so as to greatly interfere with the breathing. Always endeavor to so arrange the head of your patient that he may lie easy, and at the same time breathe freely; and, by all means, be careful and do not prop up the head too high.

Cleanliness.— Perhaps enough has already been said as to Cleanliness, while on the subject of "Health of Houses and Premises;" but it is a matter of so much importance, both as to health and as to proper nursing, and the recovery of the sick, that it cannot be amiss to again call attention to the subject. Cleanliness of the premises, the sick room, the house, and all about and around the house, is absolutely necessary, if you wish to preserve good health, or wish to see your patients recover, as they should and as they might, with proper attention in regard to the matter. But besides this, *personal cleanliness* — the cleanliness of your patient — is of the very greatest importance. Not only should the room, the bed, and all the approaches to the room and to the house, be kept perfectly clean and pure — as much so, at least, as possible — but the patient himself must be kept clean. By this, I mean that the body, the skin, and the whole person, must be kept well cleansed, by frequent and thorough Ablutions or Bathings, so as to keep the pores open and the skin in as healthy a condition as possible. You will find in another part of this book, under the head of "Bathing," some useful and practical remarks upon this subject. Any one who has witnessed the improvement in a convalescent, or any patient whose condition will admit of a warm or tepid Sponge Bath or washing, after undergoing this healthful operation — the revival, the changed appearance, and the expressions of feeling better, which almost invariably follow —will readily admit the beneficial effects of perfect personal cleanliness and frequent bathings.

Patients should, therefore, be bathed, or washed, all over, once or twice a week at least. Warm or Tepid Water should be used, as a general thing — especially for weak patients — and, if possible, soft or Rain Water. It is also well to dissolve a little Saleratus in the

Water, or add a little Lye, so as to make it a little alkaline, which serves the better to remove the gummy and oily substance which exudes from the pores of the skin. It is also well to use Soap freely; it will do no harm. After thoroughly bathing and washing the patient, dry and rub the surface well with a dry towel. This latter operation is very important. It seems to produce a reaction, to invite the blood to the surface, and to promote a free and equal circulation Where patients are able to bear it — and especially in cases of Fever — an occasional Cold Bath, or washing with cool water, followed with severe friction, or rubbing with a dry towel, will be found both agreeable and beneficial. To prevent a patient, who is very feeble, from taking cold, the best plan is to lift but a small portion of the bed-clothes, and bathe but a small surface of the body and limbs, and then rub dry with the towel; proceeding in this way until the person is thoroughly bathed.

Remember, therefore — and we would impress it as our last words on the subject — that Cleanliness, general and personal, is one of the first essentials in Good Nursing, as well as an essential prerequisite to Good Health.

RECIPES FOR PREPARING FOOD FOR THE SICK.

BEEF TEA.—For very weak patients, when even weak Meat Broths are thought to be too strong, what is called Beef Tea is often made use of. This article is greatly overrated, as an article of diet or sustenance, as it can possess but very little nutriment, and the patient must be very feeble indeed that can not bear something stronger. Nevertheless, there are cases where its employment may be the best, and all that can be permitted. It may be called the weakest possible form of Meat Broth, and is made as follows: Take, say ½ pound of lean fresh Beef, cut in thin slices, put into a small vessel or bowl, pour over one pint of Boiling Water, and let stand half an hour by the fire, to steep, but not to boil; then pour off, squeeze out the juice from the Meat a little, season with a little Salt, and give this "tea," or liquid, to the patient, according to directions. It should be taken moderately warm, and generally in small quantities, as a patient who can not take any thing stronger than Beef Tea will not be able to take much, even of that, at a time.

Chicken Panada.—Boil a young grown Chicken until nearly done, in about 2 quarts of Water; then take out, remove the skin from the breast, and when cool enough cut off the breast, or white

meat; cut into small pieces, put into a mortar, or other strong vessel, and with a pestle, or piece of hard wood properly prepared, pound and mash to a paste, adding a little of the broth in which it was boiled. Season properly with Salt and a very little Lemon Peel. Then boil to the consistency you wish, by adding sufficiently of Water — boiling slowly for a few minutes. It should be about the consistency of thin Gruel, or thin enough to drink or eat with a spoon. When it has been made into the paste, if there is too much for once, or to be used in one day, it can be put away in a jar, or suitable vessel, to be used as wanted. When made into Panada, a little toasted Crum Bread can be added, if the patient can take it, or it may be improved by adding any light farinaceous article, as Rice, Barley, unbolted Flour, and the like, properly cooked. This is a very nutritious article, containing a great amount of nourishment in a small compass.

Chicken Broth.— This may be made of any young fowl, which may afterward be served up for the family, by simply boiling it awhile before preparing it for the table, and saving the Broth. But the best way to make Chicken Broth, is to take a rather old Chicken, and boil down to rags or shreds, seasoning with Salt; keep sufficiently diluted, or thin, by adding Water, and when done, skim and strain It can be placed away in a suitable vessel (which should not be metal), to be used from daily in such quantities as the patient may require, by taking a little and warming it, and, if need be, thinning it, and, perhaps, adding other ingredients, as toasted Bread, boiled Rice, and the like.

Mutton Broth.— To 1 pound of lean Mutton (cut off all the fat), use 1 quart of Water, and a little Salt, with a few crusts of Bread; boil slowly for a couple of hours; then skim off the oily matter carefully before using.

Beef Extract. — This is a very nutritious article, and might be made very useful. It is highly recommended by Prof. Liebig. Take a pound or two of good, juicy fresh Beef, after all the skin and fat have been cut away, chop up into fine bits, like Sausage Meat; put into a suitable vessel (iron or earthen); mix with it thoroughly about an equal quantity of Water — that is, to 1 pound of Meat, 1 pint of Water; place on the stove, or some other place near the fire, where it will heat *very slowly*, stirring occasionally. It should thus stand two or three hours before it is allowed to come to the boiling point, or even to a simmer; after that, it should be gently boiled for about fifteen minutes, adding first a little more Water, say half as much as was at first added. Add also, before boiling, sufficient Salt to season it properly. After having thus boiled, let cool sufficiently,

then pour the whole off and strain through a strong linen cloth, and squeeze out well. Let stand in a pan or dish, and skim off any particles of fat and other substances that may gather at the top. After it has stood till the sediment has settled at the bottom, and it has been well skimmed, pour off gently, and bottle or put away in a tight vessel. Take a little of this any time, add sufficient Water, warm up, and thus make Soup, Broth, or, by adding still more Water, Beef Tea. This is a very important preparation.

Calf's Feet Broth.— Take two Calf's Feet, well dressed, split open and cut off all the fat, add about ¼ pound of lean Meat (Veal or Beef), boil in plenty of Water, say 3 or 4 quarts, slowly, and for several hours, down to about 3 pints. In the mean time, add to it a piece of Wheat Bread Crust, the size of your hand, sufficient Salt, and, if you like, half of a Lemon Peel. When boiled sufficient — till the feet and every thing have become perfectly tender, and boiled to a jelly — let stand, skim, and strain, when it is ready for use. If too strong or thick, it can be reduced by adding Water.

To Make Gruels.— The most common Gruel is made of Corn-meal and Water, with a little Salt. Take, say about 2 table-spoonfuls of sifted Meal, stir it into about 1 teacupful of Cold Water, beating or stirring it, to mix it well; then put it into a saucepan, or suitable utensil; add 1 or 1½ pints of Water, and boil slowly for half an hour. It may be seasoned with Salt alone; or a little Butter and Sugar, or either, may be added; also, a little Milk, if desired. The simple Corn-meal Gruel, however, will generally be preferred.

Oat-Meal Gruel.— Made the same as of Corn-meal; or stir 1 table-spoonful of fine Oat-meal into 1 pint of Water, and boil ten or fifteen minutes, stirring all the while it is boiling; season to suit.

Barley Gruel. — Boil 4 ounces of Pearl Barley, or about 1 teacupful, in 3 quarts of Water, down to 1 quart; strain, and return into the saucepan or boiler; grate into it a little Cinnamon, if you like, and sweeten; add from ½ to ¾ pint of fresh Milk; warm up, and use as wanted.

Flour Caudle.— This is a very nice article, and is made by stirring 1 table-spoonful of Flour, smoothly and carefully, into about 1 gill of cold Water; mix it thoroughly, so there are no lumps in it; then set on the fire a saucepan, with about 1 pint of fresh or sweet Milk, and when it boils, stir in gradually and slowly the Flour and Water; add sufficient Sugar to sweeten, and simmer and stir about fifteen minutes. This is a very delicate, palatable, and nourishing article of diet — good for weak patients and children.

Raisin Gruel.— In making any kind of Gruel, it is a very good plan sometimes to give it the strength and flavor of Raisins, which

may be done as follows: Boil say ½ pound of Raisins, for half an hour, in 1 quart of Milk and Water, equal parts; then strain and squeeze out, return the liquid into the saucepan or vessel, and stir in and boil for a few minutes the article with which you are to thicken the Gruel — Oat-meal, Corn-meal, or Flour — as the case may be The Raisins make it sufficiently sweet. No Salt is required; but a little Cinnamon, or the like, may be added. Where patients are fond of Eggs, or do not object to them, as some do, the yelk of an Egg may be beaten well with a little Milk, and stirred into any Gruel a few minutes before it is done boiling. This renders the article much more nutritious, and, where the patient likes it and can bear it, is a very good addition.

Boiled Flour.—For young children, who are suffering with Diarrhea or Looseness of the Bowels, no better food or more useful remedy can be given than is made as follows: Tie securely, in coarse muslin, 2 teacupfuls of Wheat Flour, and boil for eight or ten hours; take off the cloth and crust formed over the Flour, grate the inner portion as needed into boiling Milk, to the consistency of thin starch, and sweeten with White Sugar.

Bread Panada. — Take a slice of well toasted Bread, boil gently in 1 pint of Water, for a few minutes, with a bit of Cinnamon; then grate in a little Nutmeg, add a very little Butter (about 2 tablespoonfuls of Brandy, Rum, or good Whisky, to strengthen, the patient having no tendencies to Fever), and Sugar enough to make agreeable. Wine may be used instead of the Brandy, using double the quantity. This is a very nice, delicious article, and may be taken freely. Lemon Peel may be added to flavor, if desired.

Simple Bread Soup.— Take the upper crust of a loaf of Wheat Bread (the dryer and harder the better), cut or break up into small pieces; put into a saucepan, with 1 quart of Water, a piece of Butter the size of a walnut; boil slowly for fifteen or twenty minutes, stirring occasionally, or beating till the Bread is thoroughly mixed, and season with a little Salt, and serve up.

Bread Jelly. — Cut the soft part of a small loaf of Bread into thin slices, and toast them to a pale brown on both sides; then boil gently in 1 quart of Water, till the whole becomes a jelly (which may be known by putting a little in a spoon to cool); add a bit of Lemon Peel; strain and sweeten. A little Wine may be added, if desired, when the patient has no Fever. A very delicate, palatable, and nutritious article for sick folks.

Nutritious Jelly. — Take about 2 ounces, each, of Rice, Pearl Barley, and Sago, boil slowly in 3 quarts of Water, down to about 1 quart; take of this a teacupful (more or less, as the case may be),

in a little Milk, warmed, morning, noon, and night. An excellent diet.

Irish Moss Jelly. — The Moss should have the bitter taste extracted, by being allowed to stand in Cold Water for a few minutes, and then should be washed through two waters. To 1 ounce of Moss use 2 quarts of Water and a little Cinnamon Bark; boil to a thick jelly, and then strain and season to the taste with good Wine and White Sugar; if for use soon, Lemon Juice should be used in place of the Wine. Very delicate and nice.

Arrow Root Jelly. — 1. Make a dessert-spoonful of Arrow Root into a smooth Jelly with Cold Water, add ½ pint of *Boiling* Water, pour all into the pan and boil for a minute. Add Wine, Sugar, and Cinnamon to taste. 2. Use Milk instead of Wine and Water. Nourishing for weak bowels.

Arrow Root Blanc Mange. — Take 1 teacupful of Arrow Root to 1 pint of Milk; boil the Milk first with 12 Sweet and 6 Bitter Almonds, properly mashed; strain and sweeten with Loaf Sugar; put the Arrow Root in a vessel, and pour on to it the Milk, boiling hot, gently and by degrees, stirring it the while. Then pour the whole back into the vessel in which the Milk was boiled, and boil for a few minutes, still stirring. If you wish to mold it, with a cup, or mold, dip the vessel in which you wish to shape it into Cold Water, then pour in the Arrow Root, and when cold it will come out easily. When prepared for the sick, this is not necessary. Turn the whole into a vessel and set away to cool. It is a light, innocent, and moderately nutritious diet.

Wine Whey. — Take 1 quart of new Milk, half as much Water, put them in a saucepan or suitable vessel, place over a fire, and when they begin to boil add ½ pint of Sour Wine; boil slowly about fifteen minutes, during which time, as the Curd or Cheese part collects, take it off with a spoon, and when the whole of the Curd is thus removed, pour the Whey into a vessel, and it is ready for use. Good for very weak patients, and often recommended by physicians. Cider Vinegar may be used instead of the Wine, taking about half as much; and instead of skimming off the Curd, the whole, after boiling fifteen or twenty minutes, can be strained, thus separating the Curd from the Whey. Sweeten to taste, and flavor with Lemon Peel, Cinnamon, and the like, as may be preferred.

Mustard Whey. — Boil about 2 ounces of ground Mustard in 1 quart of new Milk and 1 pint of Water, for fifteen or twenty minutes, or until the Curd becomes separated from the Whey; then strain, and preserve the liquid. This is a very pleasant and useful stimulating Whey — as pleasant a form as Mustard can be used in, and in many

cases is preferable to Wine Whey. A teacupful or so, sweetened with Sugar, should be taken three or four times a day. Good in all cases of low Fevers, as in Typhoid, as a stimulating diaphoretic, and whenever a mild and agreeable stimulant is wanted.

Alum Whey. — Boil about an even table-spoonful of powdered Alum in 1 pint of fresh Milk, till curdled; then strain and squeeze out the Whey. This is an astringent Whey, and may be used with advantage in all cases where an astringent is required, as in Diarrhea, and especially in cases of Uterine and other Hemorrhages, and in Diabetes. Dose: half a teacupful three or four times a day, or more, if the stomach will bear it.

To Mull Port Wine. — Boil a little Allspice in 1 pint of Water, to get the proper flavor; then add an equal quantity of Port Wine, a little Sugar, and boil together a few minutes, and serve with Toast, or any way preferred.

To Mull Catawba, or Sour Wine. — Take 1 pint of Sour Wine, ½ pint of Water, and a table-spoonful of Allspice; boil together gently for a few minutes; in the mean time add the yelk of 2 Eggs, well beat up, while boiling, with a little Sugar, and, if desired, a little Cinnamon and Lemon Peel. This is a very agreeable and quite strengthening article.

Refreshing Drink in Fevers. — Take 4 ounces of Tamarinds, 4 ounces of Raisins, and boil in about 3 quarts of Water, slowly, for fifteen or twenty minutes, or till the water is reduced near one-fourth; then strain, while hot, in a vessel, with a little Lemon Peel in it. When cool, use as a drink. Sweeten a little if desired. Tamarinds, Prunes, Currants (fresh or dried, or in jelly), Cranberries with Raisins, steeped either in warm or cold water, or boiled, make excellent Drinks for the sick — especially for Fever patients.

Lemonade — Which every body knows how to make, is also an agreeable drink, generally allowable in Fevers, and may be made weak or strong, according to the taste and strength of the patient.

Apple Water. — Cut a couple of good-sized sour Apples into thin slices; pour over them 1 quart of Boiling Water; let stand two or three hours, then strain, and, if desired, sweeten a little. Or roasted Apples may be used for the same purpose. This makes a mild and very pleasant drink, and may be used freely.

FOR CONVALESCENTS, AND OTHERS.

BROWN (**or Graham**) **Bread**—Is made good of unbolted Wheat Flour, freshly ground. Take lukewarm Water to wet the Flour, and use Yeast and Salt, as for Wheat Bread. Knead in Flour to

make stiff; let stand from one to two hours, till risen, and then bake in loaves of moderate size. This is the best Bread for people who are inclined to be Costive, or who suffer in the least from Dyspepsia.

To make Unleavened Graham Biscuit.—Take unbolted (or Graham) Flour, made from best Winter Wheat, add a little Salt, and mix with a spoon, adding Water or Sweet Milk enough to render as thick as cup cake, and drop into small tins and bake in a quick oven, so hot that they will be well done in fifteen or twenty minutes. These cakes are perfectly physiological — excellent for Dyspeptics, and as harmless, eaten warm, as Potatoes.

Bread Pudding.—Take about ½ pound of Bread Crumbs, ½ pint of fresh Milk; pour the Milk, hot, over the Bread, and let stand half an hour, covered; then beat up the yelk of 2 Eggs, and add to the Bread; grate in a little Nutmeg; add a little Salt, and Sugar enough to make agreeably sweet, if desired; mix the whole together well; then tie up in a linen or muslin sack, and boil in Water half or three-quarters of an hour; then take out, lay on a plate, and pour over it some melted Butter, with very little Wine or Brandy in it, and, if desired, sprinkle on some white powdered Sugar.

Potato Pudding.—Take ½ pound of boiled Potatoes, 2 Eggs (yelks and whites), 2 table-spoonfuls of Butter, ½ pint of fresh Milk, the juice of a Lemon, and a little Salt, and beat all together well; add Sugar to taste, and then bake—either with a crust or not, as may be preferred.

Oysters and Oyster Pâtés.—Oysters are spoiled by cooking. "Our practice in regard to the oyster is exceptional, and furnishes a striking example of correctness in the popular judgment on dietetic questions. The oyster is almost the only animal substance which we eat, by preference, in the raw or uncooked state; and it is interesting to know that there is a sound physiological reason at the bottom of this preference. The fawn-colored mass which constitutes the dainty of the oyster is its liver, and this is little less than a mass of glycogen; associated with the glycogen, but withheld from actual contact with it during life, is its appropriate digestive ferment—the hepatic diastase. The mere crushing of the dainty between the teeth brings these two bodies together, and the glycogen is at once digested, without other help, by its own diastase. The oyster, in the uncooked state, or merely warmed, is, in fact, self-digestive. The advantage of this provision is lost by cooking; the heat destroys the associated ferment, and a cooked oyster has to be digested, like any other food, by the eater's own digestive power." This, by Dr. Roberts, tells us how it is that oysters *au naturel* are so much in vogue for invalids, as they deservedly are. Also, why oysters should not be cooked in oyster sauce, but put into the prepared sauce just as it comes to table. Why, as King Chambers insists, in a beef-steak pudding, the oysters should not be cooked, but a flap of the paste raised, and the oysters popped in, just as the pudding is served. In making oyster pâtés, the paste is cooked in bread-crumbs, which is then taken out and the oysters put in; after which, the pâtés are just warmed, and no more, and then brought to the table. The idea that long cooking increases the digestibility of food is not always correct. But "cooking" is essentially a part of the digestive process, not only for man, but some domesticated animals as well. The products vary according to the skill of the cook, and the adjustment of the process to what physiological knowledge tells us is correct and sound.

LIST OF MEDICINES AND DOSES

FOR GROWN PERSONS.

FIRST CLASS—COMPRISING VEGETABLE SUBSTANCES.

COMMON NAMES.	PROPERTIES.	DOSES.
Aconite Leaves, Tincture of	Narcot., Sed. and Nau.	15 to 20 drops 3 times a day.
Aconite Root, Tincture of	Narcot., Sed. and Nau.	5 to 8 drops 3 times a day.
Aconite Root, Fluid Extract of	Narcotic and Sedative.	5 to 6 drops 3 times a day.
Aconite Root, Solid Extract of	Narcotic and Sedative.	¼ to ½ grain 3 times a day.
Agrimony, Decoction of	Laxative and Tonic	Table-spoonful every 3 or 4 hours.
Alder, Black, Decoction of	Tonic and Astringent.	Table-spoonful 3 times a day.
Alder, Tag, Decoction of	Alter. and Astringent.	Table-spoonful 3 or 4 times a day.
Aloes, Socotrine, Powdered	Purgative	10 to 15 grains.
Aloes, Socotrine, Compound Decoction of	Purgative and Emmen.	2 table-spoonfuls.
Aloes, Socotrine, Pills of	Purgative	2 to 3 pills at bed time.
Aloes, Socotrine, Tincture of	Purgative	3 to 6 drams at bed time.
Aloes and Myrrh, Tincture of	Emmenagogue	1 to 2 tea-spoonfuls 2 or 3 times a day
Aloes and Myrrh, Pills of	Emmenagogue	3 or 4 pills twice a day.
American Hellebore, (See Veratrum Viride)		
American Colombo, Decoction of	Tonic	Table-spoonful 3 times a day.
Ammoniac Mixture	Expectorant	Table-spoonful 3 or 4 times a day.
Angelica Root, Fluid Extract of	Stimulant and Arom.	Tea-spoonful 3 or 4 times a day.
Angelica Root, Decoction of	Stimulant and Arom.	Wine-glassful 2 or 3 times a day.
Anise Seed, Oil of	Carmin. and Aromatic.	10 to 12 drops on Sugar.
Anise Seed, Essence of	Carmin. and Aromatic.	1 tea-spoonful.
Anise Seed, Infusion of	Carmin. and Aromatic.	1 to 2 table-spoonfuls.
Apple Tree Bark, Decoction of	Tonic	Wine-glassful 2 or 3 times a day.
Arrow Root, Bermuda	Nutritive and Tonic	As a gruel.
Asafœtida, Pills of	Anti-spasmodic	1 to 2 pills.
Asafœtida, Milk of	Anti-spasmodic	1 to 2 tea-spoonfuls.
Asafœtida, Tincture of	Anti-spasmodic	30 to 40 drops.
Avens Root, Decoction of	Tonic and Astringent.	Table-spoonful 2 or 3 times a day
Balm, (See Lemon Balm)		
Balm Gilead Buds, Tincture of	Stim., Ton. and Diur.	Tea-spoonful 2 or 3 times a day.
Balmony, Decoction of	Tonic and Cathartic	Wine-glassful at bed time.
Balmony, Fluid Extract of	Tonic and Cathartic	Tea-spoonful at bed time.
Balsam of Copaiva	Stim., Diur. and Lax.	20 to 30 drops 3 times a day.
Balsam of Fir	Diuretic	10 to 15 drops.
Balsam of Peru	Stimulant and Tonic	5 or 10 drops twice a day.
Balsam of Tolu, Tincture	Stimulant and Tonic	30 to 40 drops.
Balsam of Tolu, Syrup	Stim. and Expectorant.	2 tea-spoonfuls.
Bayberry Bark, (Powdered) Infusion of	Astr., Stim. and Emet.	1 table-spoonful at bed time.
Belladonna, Fluid Extract of	Nar., Diaph. and Diur.	3 to 6 drops.
Belladonna, Solid Extract of	Nar., Diaph. and Diur.	¼ to ½ grain 2 or 3 times a day.
Belladonna, Tincture of	Nar., Diaph. and Diur.	15 to 30 drops.
Belladonna, Plaster of	Anodyne and Diaph.	Applied externally.
Belladonna, Ointment of	Anodyne	Applied externally.
Benne Plant, Infusion of	Dem. and Laxative	Table-spoonful every 3 or 4 hours
Bearberry Leaves, (See Uva Ursi)		
Beth Root, Decoction of	Astringent and Tonic.	Table-spoonful 2 or 3 times a day.
Beth Root, Fluid Extract of	Astringent and Tonic.	25 to 30 drops 2 or 3 times a day.
Bitter Root, Decoction of	Alter., Emet. and Diap.	2 to 3 tea-spoonfuls.
Bitter Root, Fluid Extract of	Alter., Emet. and Diap.	20 to 30 drops.
Bitter Sweet, Decoction of	Emetic and Narcotic	Wine-glassful 3 times a day.
Bitter Sweet, Fluid Extract of	Emetic and Narcotic	30 to 40 drops 3 times a day.
Bitterbugle, Fluid Extract of	Astringent and Tonic.	20 to 40 drops.
Black Drop	Narcotic	10 to 12 drops.
Black Cohosh, Decoction of	Nar., Diaph. and Diur.	Wine-glassful 3 times a day.

COMMON NAMES.	PROPERTIES.	DOSES.
Black Cohosh, Fluid Extract of	Nar., Diaph. and Diur.	20 to 30 drops 3 times a day.
Black Cohosh, Tincture of	Nar., Diaph. and Diur.	Tea-spoonful 3 or 4 times a day.
Black Hellebore, Decoction of	Hyd., Cath. and Emm.	2 tea-spoonfuls every 3 or 4 hours.
Black Hellebore, Fluid Extract of	Hyd., Cath. and Emm.	10 to 20 drops 3 or 4 times a day
Black Hellebore, Solid Extract of	Hyd., Cath. and Emm.	2 to 4 grains 3 or 4 times a day.
Black Hellebore, Tincture of	Hyd., Cath. and Emm.	20 to 40 drops 3 or 4 times a day.
Black Root, (See Culver's Root)	.....	
Blacksnake Root, (See Black Cohosh)	.....	
Blackberry Root, Decoction of	Astringent and Tonic.	Wine-glassful 3 or 4 times a day.
Blackberry Root, Fluid Extract of	Astringent and Tonic.	Tea-spoonful 3 times a day.
Blackberry Root, Syrup of	Astringent	Table-spoonful 3 times a day.
Blessed Thistle, Decoction of	Tonic and Emetic	Table-spoonful.
Blue Cohosh, Fluid Extract of	Diuretic and Diaphor.	30 to 40 drops.
Blue Cohosh, Decoction of	Diuretic and Diaphor.	Table-spoonful.
Blood Root, Tincture of	Emet. and Expectorant	30 to 60 drops.
Boneset, Infusion of	Stim., Sudor. and Em.	1 to 2 table-spoonfuls 3 or 4 times a day.
Boneset, Fluid Extract of	Stim., Sudor. and Em.	30 to 40 drops 3 or 4 times a day.
Buchu, Infusion of	Diur. and Diaphoretic.	Table-spoonful 4 or 5 times a day.
Buchu, Fluid Extract of	Diur. and Diaphoretic.	Tea-spoonful 3 or 4 times a day.
Buchu, Tincture of	Diur. and Diaphoretic.	1 to 2 tea-spoonfuls 3 or 4 times a day.
Buchu and Uva Ursi, Fluid Extract of	Diuretic and Diaphor.	Tea-spoonful 3 or 4 times a day.
Buckthorn, Fluid Extract of	Hydragogue Cathartic.	Tea-spoonful at bed time.
Burdock, Decoction of	Herp. and Anti-scorb.	Table-spoonful.
Burdock, Fluid Extract of	Herp. and Anti-scorb.	Tea-spoonful.
Butternut, Fluid Extract of	Tonic and Cathartic	Tea-spoonful.
Butternut, Solid Extract of	Tonic and Cathartic	10 to 15 grains.
Burgundy Pitch, Plaster of	Stimulant	Applied externally.
Camphor, Gum	Anti-spas. and Sedat.	2 to 5 grains.
Camphor, Gum	Stim. and Narcotic	5 to 10 grains.
Camphor, Spirits of	Anti-spas. and Sedat.	10 to 15 drops.
Camphor, Spirits of	Stimulant and Narcotic	20 to 25 drops.
Camphor, Water of	Anodyne and Sedative.	2 to 3 tea-spoonfuls.
Camphor, Compound Liniment of	Anodyne	Applied externally.
Calamus Root, Fluid Extract of	Arom., Stim. and Stom.	Tea-spoonful.
Caraway Seed, Infusion of	Aromat. and Carminat.	Table-spoonful.
Caraway Seed, Oil of	Arom., Carm. and Lax.	4 to 6 drops.
Cardamom Seed, Tincture of	Aromatic and Stimul't.	Tea-spoonful.
Catechu, Powdered	Astringent	15 to 25 grains.
Catechu, Tincture of	Astringent	1 tea-spoonful.
Catnip, Decoction of	Car., Diaph. and Stom.	Table-spoonful.
Catnip, Fluid Extract of	Car., Diaph. and Stom.	Tea-spoonful.
Cayenne Pepper, (powdered)	Stimulant	5 or 6 grains.
Cayenne Pepper, Tincture of	Stimulant	10 to 20 drops.
Cayenne Pepper, Infusion of	Stimulant	Gargle for Sore Throat
Cayenne Pepper, Lozenges of	Stimulant	For Sore Throat.
Castor Oil	Purgative	1 to 2 table-spoonfuls.
Castor Oil, Emulsion of	Purgative	2 to 4 table-spoonfuls.
Celandine Plant, (Garden) Fluid Extract of	Aperient and Diuretic.	Tea-spoonful.
Chamomile Flowers, Cold Infusion of	Tonic and Stomachic	1 to 2 table-spoonfuls 3 times a day.
Chamomile Flowers, Warm do.	Emetic	Wine-glassful every 15 or 20 minutes
Chamomile Flowers, Fomentation of	.....	
Chamomile Flowers, Fluid Extract of	Tonic and Stomachic	Tea-spoonful 3 times a day.
Chamomile Flowers, Solid Extract of	Tonic and Stomachic	10 to 15 grains 3 times a day.
Cinnamon, (Powdered)	Astr. and Stomachic	5 to 10 grains.
Cinnamon, Oil of	Astr. and Stomachic	2 to 4 drops.
Cinnamon, Essence of	Astr. and Stomachic	20 to 30 drops.
Cloves, (Powdered)	Stim., Arom. and Carm.	10 to 15 grains.
Cloves, Oil of	Stim., Arom. and Carm.	2 to 6 drops.
Cloves, Infusion of	Stim., Arom. and Carm.	Table-spoonful every 3 or 4 hours.
Comfrey Root, Decoction of	Diur., Stim. and Altern.	Table-spoonful 3 or 4 times a day.
Colombo Root, Decoction of	Tonic	Table-spoonful 3 times a day.
Colombo Root, Tincture of	Tonic	Tea-spoonful 3 times a day.
Colchicum Root, Wine of	Nar., Diur. and Sedat.	10 to 40 drops 3 times a day.
Colchicum Root, Fluid Extract of	Nar., Diur. and Sedat.	10 to 20 drops 3 times a day.
Colchicum Root, Solid Extract of	Nar., Diur. and Sedat.	1 to 2 grains 3 times a day.
Colchicum Seed, Wine of	Nar., Diur. and Sedat.	30 to 60 drops 3 times a day.
Colchicum Seed, Fluid Extract of	Nar., Diur. and Sedat.	10 to 20 drops 3 times a day.
Colchicum Seed, Tincture of	Nar., Diur. and Sedat.	30 to 60 drops 3 times a day.
Conium, Solid Extract of	{Nar., Arom., Anti-spas. and Deob.}	2 to 3 grains twice a day.
Coriander Seed, Infusion of	Carminative	Table-spoonful.
Cotton Root, Fluid Extract of	Emm., Partu. and Abo.	20 to 30 drops.
Cowhage	Anthelmintic	{5 or 6 grains in a tea-spoonful of Molasses, before breakfast.
Colocynth, Compound Extract of	Laxative	5 grains at bed time.
Colocynth, Compound Extract of	Purgative	20 grains at bed time.
Cranesbill Root, Decoction of	Astr., Styp. and Tonic.	Table-spoonful.
Cranesbill Root, Fluid Extract of	Astr., Styp. and Tonic.	30 to 60 drops.
Cramp Bark, Decoction of	Anti-spasmodic	Table-spoonful.
Crawley, Decoction of	Bal. and Stomachic	Table-spoonful.
Cubebs (Powdered)	Stimulant and Diuretic	20 to 30 grains.
Cubebs Fluid Extract of	Stimulant and Diuretic	20 to 40 drops.

COMMON NAMES.	PROPERTIES.	DOSES.
Cubebs, Tincture of	Stimulant and Diuretic	1 to 2 tea-spoonfuls.
Cubebs, Oil of	Stimulant and Diuretic	10 to 12 drops on Sugar.
Culver's Root, Fluid Extract of	Lax., Tonic and Cath...	30 to 60 drops.
Culver's Root, Solid Extract of	Lax., Tonic and Cath...	5 to 8 grains.
Culver's Root, Tincture of	Lax., Tonic and Cath...	1 to 2 tea-spoonfuls.
Dandelion, Fluid Extract of	Alt., Aper., Ton., Diur.	1 to 2 tea-spoonfuls.
Dandelion, Solid Extract of	Aperient	10 to 15 grains.
Deadly Nightshade (See Belladonna)		
Devil's Bit, Decoction of	Tonic, Stom. and Nar...	1 to 2 tea-spoonfuls.
Dittany, Infusion of	Arom., Stim. and Ton..	1 to 2 table-spoonfuls.
Dogwood Bark, Fluid Extract of	Tonic, Astr. and Stim..	Tea-spoonful 3 or 4 times a day.
Dogwood Bark, Decoction of	Tonic, Astr. and Stim..	Wine-glassful 3 or 4 times a day
Dover's Powder	Diaphoretic	10 to 12 grains at bed time.
Elder Flowers, Decoction of	Diaph., Diur. and Alt...	1 to 2 table-spoonfuls.
Elder Flowers, Fluid Extract of	Diaph., Diur. and Alt...	Tea-spoonful.
Elecampane, Decoction of	Diaph. and Expector ...	Table-spoonful.
Elecampane, Syrup of	Diaph. and Expector...	Table-spoonful.
Elaterium	Hydragogue Cathartic.	¼ to ½ grain.
Elm Bark, Infusion of	Dem. and Diuretic	Wine-glassful.
Elm Bark, Poultice of	Emollient	Applied externally.
Ergot, Powdered, (fresh)	Astringent	15 to 20 grains.
Ergot, Fluid Extract of	Astringent	15 to 20 drops.
Ergot, Tincture of	Astringent	1 tea-spoonful.
Ergot, Wine of	Astringent	1 tea-spoonful.
Featherfew, Decoction of	Ton., Stom. and Emm..	Table-spoonful.
Fennel Seed, Infusion of	Aromatic, Carminative	Table-spoonful.
Fennel Seed, Oil of	Aromatic, Carminative	3 to 6 drops.
Fever Root, Decoction of	Cath., Diu. and Emetic	Table-spoonful.
Fleabane, Cold Infusion of	Ton., Diur. and Astrin.	Wine-glassful every 2 or 3 hours.
Fleabane, Oil of	Astrin. and Styptic	5 or 6 drops every 2 or 3 hours.
Flax Seed, Infusion of	Demulcent	Wine-glassful every 3 or 4 hours.
Flax Seed, Poultice of	Astringent	Excellent for Drawing.
Flax Seed, Oil and Lime Water	Astringent	Applied to Scalds, Burns, etc.
Foxglove, Powdered	Diur., Narcot. and Sed.	1 grain 2 or 3 times a day.
Foxglove, Fluid Extract of	Diur., Narcot. and Sed.	2 to 3 drops 3 times a day.
Foxglove, Solid Extract of	Diur., Narcot. and Sed.	1 grain 2 or 3 times a day.
Foxglove, Tincture of	Diur., Narcot. and Sed.	10 to 20 drops 2 or 3 times a day.
Foxglove, Infusion of	Diur., Narcot. and Sed.	Tea-spoonful twice a day.
Garlic, Infusion of	Stim., Expect. and Ton.	Table-spoonful.
Garlic, Syrup of	Expectorant	1 to 2 tea-spoonfuls.
Gamboge, Powdered	Cathartic	2 to 5 grains.
Gentian, Tincture of	Bitter Tonic	Tea-spoonful 2 or 3 times a day.
Geranium (See Cranesbill)		
Ginger, Powdered	Stimulant and Carmin.	20 to 30 grains.
Ginger, Tincture of	Stimulant and Carmin.	1 to 2 tea-spoonfuls.
Golden Seal (See Yellow Root)		
Gelseminum, Fluid Extract of	Ner., Sed., Dia. and Feb	5 to 10 drops.
Gelseminum, Tincture of	Ner., Sed., Dia. and Feb	10 to 30 drops.
Gum Arabic, Mucilage of	Demulcent	Table-spoonful every 3 or 4 hours.
Guaiacum Gum, Tincture of	Diur. and Diaphoretic.	Tea-spoonful 2 or 3 times a day.
Guaiacum Wood, Decoction of	Diuretic and Diaphor.	Wine-glassful every 3 or 4 hours.
Henbane, Tincture of	Narcotic and Anodyne	1 tea-spoonful.
Henbane, Fluid Extract of	Narcotic and Anodyne	20 to 25 drops.
Henbane, Solid Extract of	Narcotic and Anodyne	2 to 3 grains 3 times a day.
Hemlock Leaves (See Conium)		
Hemlock Bark, Powdered Decoction of	Alt., Diaph. and Sudor.	Table-spoonful.
Hiera Picra, (Powder)	Purgative and Stom...	10 to 20 grains.
Hoarhound, Decoction of	Sud., Pec., Ap. and Ton.	Table-spoonful.
Hoarhound, Syrup of	Sudorific and Pectoral.	Table-spoonful.
Hoarhound, Fluid Extract of	Sud., Pec , Ap. and Ton.	Tea-spoonful.
Hollyhock Flowers, Infusion of	Demulcent	Wine-glassful.
Hydrastin, (Active Principle of Yellow Root)	Ast., Toń., Sto., Anti-bil	1 to 2 grains.
Indian Arrow Bark, (See Wahoo)		
Indian Turnip Root, Decoction of	Stim., Expec. and Nar.	1 to 2 table-spoonfuls.
Indian Hemp, (Foreign) Solid Extract of	Anti-spas., Hyp., Phre.	½ to 1 grain 2 or 3 times a day.
Indian Hemp, (White) Decoction of	Dia., Diur. and Emetic.	Table-spoonful 2 or 3 times a day.
Irish Moss, Infusion of	Nutrit., Dem. and Exp.	Table-spoonful.
Ipecac, Powdered	Emetic and Diaphoret.	20 grains.
Ipecac Fluid Extract of	Emetic and Diaphoret.	20 to 25 drops.
Ipecac, Wine of	Emetic and Diaphoret.	1 to 2 tea-spoonfuls.
Ipecac, Syrup of	Emetic and Diaphoret.	Table-spoonful.
Ipecac, Syrup of	Expectorant	Tea-spoonful.
Jalap, Powdered	Cathartic	15 to 30 grains.
Jalap, Fluid Extract of	Cathartic	15 to 30 drops.
Jalap, Solid Extract of	Cathartic	10 grains at bed time.
Jerusalem Oak, Decoction of	Anthelmintic	Table-spoonful before breakfast.
Juniper Berries, Infusion of	Diuretic	Wine-glassful 3 or 4 times a day.
Juniper Berries, Oil of	Diuretic	5 to 8 drops.
Lactucarium	Anodyne	5 to 10 grains.
Ladies' Slipper Root, Decoction of	Nervine	Table-spoonful.
Ladies' Slipper Root Fluid Extract of	Nervine	Tea-spoonful.

COMMON NAMES.	PROPERTIES.	DOSES.
Larkspur Seed, Decoction of	Narcotic and Diuretic.	Table-spoonful.
Laudanum	Narcotic	20 to 25 drops.
Laudanum	Anodyne	10 to 15 drops.
Lemon Balm, Infusion of	Diaph. and Stimulant.	Table-spoonful.
Leptandrin, (Active Principle of Culver's Root)	Cathartic	5 or 6 grains at bed time.
Liquorice Root, Decoction of	Demulcent and Expec.	Wine-glassful.
Liquorice Root, Spanish Extract of	Demulcent and Expec.	At pleasure.
Life Everlasting, Decoction of	Astrin., Dia. and Stom.	1 to 2 table-spoonfuls.
Life Root, Decoction of	Tonic, Diaph. and Pec.	Table-spoonful.
Life Root, Fluid Extract of	Tonic, Diaph. and Pec.	Tea-spoonful.
Liverwort, Decoction of	Astr., Demul. and Pec.	1 to 2 table-spoonfuls.
Liverwort, Fluid Extract of	Astr., Demul. and Pec.	1 tea-spoonful.
Liverwort, Syrup of	Astr., Demul. and Pec.	1 table-spoonful.
Lobelia Herb, Powdered	Emetic and Diaphoret.	10 to 15 grains.
Lobelia Herb, Infusion of	Emetic and Diaphoret.	2 tea-spoonfuls.
Lobelia Herb, Fluid Extract of	Emetic, Diaph. and Ex.	30 to 40 drops.
Lobelia Seed, Powdered	Emetic and Diaphoret.	5 to 10 grains.
Lobelia Seed, Infusion of	Emetic and Diaphoret.	1 to 2 tea-spoonfuls.
Lobelia Seed, Fluid Extract of	Emetic, Diaph. and Ex.	20 to 30 drops.
Lobelia Seed, Tincture of	Emetic, Diaph. and Ex.	½ to 1 tea-spoonful.
Lobelia Seed, Syrup of	Expectorant	1 tea-spoonful.
Lovage, Infusion of	Carm., Stom. and Emm.	1 to 2 tea-spoonfuls.
Macrotin, Active Principle of Black-snake Root	Nar., Dia., Diu. and Ner.	2 to 3 grains.
Maiden-hair Herb, Decoction of	Expect. and Stomachic	Table-spoonful.
Maiden-hair Herb, Syrup of	Expect. and Stomachic	Table-spoonful.
Marsh-mallow Root, Infusion of	Demulcent and Diuret.	Table-spoonful every 2 or 3 hours.
Marsh-mallow Root, Syrup of	Demulcent and Expec.	Table-spoonful every 2 or 3 hours.
Marsh-rosemary Root, Decoction of	Astringent	1 to 2 tea-spoonfuls.
May Apple Root, Powdered	Hyd., Cathar. and Em.	15 to 20 grains at bed time.
May Apple Root, Decoction of	Hyd., Cathar. and Em.	Table-spoonful at bed time
May Apple Root, Fluid Extract of	Hyd., Cathar. and Em.	20 to 30 drops at bed time.
May Apple Root, Solid Extract of	Hyd., Cathar. and Em.	5 to 10 grains at bed time.
May Weed Herb, Infusion of	Diaph. and Sudorific	Table-spoonful.
Manna	Laxative	1 to 2 drams before breakfast.
Manna, Syrup of	Laxative	1 to 2 table-spoonfuls before breakfast.
Milk Weed Root, Infusion of	Diuretic and Anodyne	1 to 2 tea-spoonfuls.
Morphine, Sulphate of	Anodyne and Soporific	⅛ to ¼ grain.
Morphine, Solution of	Anodyne and Soporific	1 tea-spoonful.
Morphine, Syrup of	Anodyne and Soporific	1 to 2 tea-spoonfuls.
Morphine, Compound Syrup of (Jackson's Cough Syrup)	Anodyne and Expecto.	1 to 2 tea-spoonfuls.
Motherwort, Decoction of	Ner. and Emmenag'ue	1 to 2 table-spoonfuls.
Mullein Leaves, Infusion of	Anod. and Demulcent	Wine-glassful.
Mustard Seed, Black, Ground	Stim., Diu. and Emetic	½ to 1 tea-spoonful.
Mustard Seed, White, Ground	Stim., Diu. and Emetic	½ to 1 tea-spoonful.
Mustard Plaster	Rubefac. and Vesicant	Applied externally.
Myricin, (Active Principle Bayberry)	Nerv. and Diaphoretic	2 to 5 grains.
Nettle Herb, Infusion of	Tonic and Astringent	1 to 2 tea-spoonfuls.
Nutgalls, Tincture of	Astringent	1 to 2 tea-spoonfuls.
Nutgalls, Ointment of	Astringent	Applied externally for Piles, etc.
Nux Vomica, Tincture of	Exc., Sti., Ton. and Diu.	15 to 20 drops 3 times a day.
Nux Vomica, Fluid Extract of	Exc., Sti., Ton. and Diu.	3 to 5 drops 2 or 3 times a day.
Nux Vomica, Solid Extract of	Exc., Sti., Ton. and Diu.	1 grain 3 times a day.
Opium, Powdered	Narcotic and Stimul't	1 grain at bed time.
Opium, Tincture of (See Laudanum)		
Opium, Camphorated Tincture of (See Paregoric)		
Orange Peel, Tincture of	Tonic and Carminative	Tea-spoonful 3 times a day.
Oswego Tea, Infusion of	Tonic, Stimu. and Feb.	Table-spoonful 3 or 4 times a day.
Parsley Root, Infusion of	Diuretic and Neph	Table-spoonful 4 or 5 times a day.
Pareira Brava, Decoction of	Diuretic and Alterative.	Table-spoonful 4 or 5 times a day.
Pareira Brava, Fluid Extract of	Diuretic and Alterative.	30 to 60 drops 3 or 4 times a day.
Paregoric	Anodyne	1 to 2 tea-spoonfuls.
Pennyroyal, Infusion of	Emm., Stim. and Diaph.	Wine-glassful every hour.
Peppermint, Infusion of	Stim. and Carminative	Wine-glassful 2 or 3 times a day.
Peruvian Bark, Powdered	Tonic and Febrifuge	1 dram 2 or 3 times a day.
Peruvian Bark, Decoction of	Tonic and Febrifuge	Wine-glassful 3 or 4 times a day.
Peruvian Bark, Fluid Extract of	Tonic and Febrifuge	50 to 60 drops 3 times a day.
Peruvian Bark, Solid Extract of	Tonic and Febrifuge	10 to 20 grains 2 or 3 times a day.
Peruvian Bark, Tincture of (Huxhams)	Tonic and Febrifuge	Table-spoonful 3 or 4 times a day.
Piperine, (Active Principle of Black Pepper)	Tonic and Stimulant	1 to 3 grains.
Pink Root, Infusion of	Anthelmintic	Table-spoonful before meals.
Pink Root, Fluid Extract of	Anthelmintic	½ to 1 tea-spoonful before meals.
Pink Root and Senna, Fluid Extract of	Anthel. and Purgative	Tea-spoonful before meals.
Pipsisseway, Decoction of	Tonic, Diur. and Astr.	Wine-glassful every 4 or 5 hours.
Pilewort, Decoction of	Astringent and Herp.	Applied externally.
Pleurisy Root, Infusion of	Carm., Tonic and Diur.	Wine-glassful every 2 or 3 hours.
Pleurisy Root, Fluid Extract of	Carm., Tonic and Diur.	Tea-spoonful 2 or 3 times a day

COMMON NAMES.	PROPERTIES.	DOSES.
Podophyllin, (Active Principle of May Apple)	Drastic and Purgative	1 to 3 grains at bed time.
Poplar Bark, Decoction of	Tonic and Febrifuge	Table-spoonful 2 or 3 times a day.
Pond Lily Root, Decoction of	Astringent	Table-spoonful 3 or 4 times a day.
Queen's Root, (Stillingia) Decoction of	Alterative and Cathar.	Wine-glassful 3 or 4 times a day.
Queen's Root, Fluid Extract of	Alterative and Cathar.	Tea-spoonful 3 or 4 times a day.
Queen of the Meadow Root, Decoction of	Diuretic and Aromatic.	Table-spoonful every 3 or 4 hours.
Quassia, Infusion of	Bitter Tonic	Table-spoonful after meals.
Quassia, Tincture of	Bitter Tonic	Tea-spoonful after meals.
Raspberry Leaves, Infusion of	Astringent and Tonic	Table-spoonful.
Raspberry Leaves, Syrup of	Astringent and Tonic	Table-spoonful.
Rag Weed, Decoction of	Anthel. and Stimulant	Table-spoonful.
Rhatany Root, Decoction of	Astringent and Tonic	Table-spoonful.
Rhatany Root, Tincture of	Astringent and Tonic	Tea-spoonful.
Rhubarb, Powdered	Cathartic and Astrin	20 to 30 grains.
Rhubarb, Tincture of	Cathartic and Astrin	1 to 2 tea-spoonfuls.
Rhubarb, Fluid Extract of	Cathartic and Astrin	25 to 40 drops.
Rhubarb, Syrup of	Cathartic and Astrin	2 to 3 tea-spoonfuls.
Rue, Herb, Decoction of	Tonic, Emm. and Anth.	Table-spoonful.
Saffron, American, Infusion of	Diaphoretic	2 to 3 tea-spoonfuls.
Saffron, American, Infusion of	Stimulant and Emmen.	4 to 5 tea-spoonfuls.
Saffron, Spanish, Infusion of	Diaphoretic	1 to 2 tea-spoonfuls.
Saffron, Spanish, Infusion of	Stimulant and Emmen.	2 to 3 tea-spoonfuls.
Sage, Infusion of	Sudorific and Stom	Wine-glassful.
Sassafras Pith, Infusion of	Dumulc. and Anodyne	1 or 2 tea-spoonfuls; also applied to Inflamed Eyes.
Sassafras Bark, Infusion of	Diaph. and Stimulant	Wine-glassful every 2 or 3 hours.
Savin Leaves, Infusion of	Emm., Stim. and Diur.	1 to 2 tea-spoonfuls.
Savin Leaves, Extract of	Emm., Stim. and Diur.	2 to 5 grains.
Savin Leaves, Oil of	Emm., Stim. and Diur.	2 to 5 drops.
Sarsaparilla, Decoction of	Alterative and Deo	Tea-cupful 3 times a day.
Sarsaparilla, Fluid Extract of	Alterative and Deo	Tea-spoonful 3 times a day.
Sarsaparilla, Compound Syrup of	Alterative and Deo	Table-spoonful 4 times a day.
Salicine	Tonic and Astringent	5 or 6 grains 3 or 4 times a day.
Santonine	Anthelmintic	1 to 2 grains twice a day.
Scammony, Powdered	Cathartic	10 to 15 grains at bed time.
Skull-cap, Infusion of	Nerv., Sudo. and Diur.	Wine-glassful every 3 or 4 hours.
Skull-cap, Fluid Extract of	Nerv., Sudo. and Diur.	Tea-spoonful every 3 or 4 hours.
Scutellarin, (Active Principle of Skull-cap)	Nerv., Sudo. and Diur.	1 to 3 grains.
Senega Snake Root, Decoction of	Exp., Stimu. and Diur.	Table-spoonful.
Senega Snake Root, Fluid Extract of	Exp., Stimu. and Diur.	20 to 30 drops.
Senega Snake Root, Syrup of	Exp., Stimu. and Diur.	1 to 2 tea-spoonfuls.
Senna, Decoction of	Cathartic	1 to 2 table-spoonfuls.
Senna, Fluid Extract of	Cathartic	1 to 2 tea-spoonfuls.
Skunk Cabbage, Infusion of	Sti., Ex. and Anti-spas.	1 to 2 tea-spoonfuls.
Stillingia, (See Queen's Root)		
Spikenard, Decoction of	Pectoral and Stomachic	2 to 3 tea-spoonfuls.
Sweet Bazil, Cold Infusion of	Arom., Stim. and Arc	1 to 2 tea-spoonfuls.
Sweet Marjoram, Decoction of	Diaphoretic and Tonic	1 to 2 table-spoonfuls.
Stramonium Leaves, Tincture of	Nar., Sed. and Anti-spas	20 to 30 drops 2 or 3 times a day.
Stramonium Leaves, Ointment of	Sedative	Applied externally.
Stramonium Leaves, Extract of	Narcotic and Sedative	1 grain 2 or 3 times a day.
Tansey (Double), Decoction of	Sud., Emm. and Anthel	1 to 2 table-spoonfuls.
Tansey (Double), Oil of	Sud., Emm. and Anthel	15 to 20 drops.
Thyme, Infusion of	Aromat. and Stomachic	Wine-glassful.
Thyme, Fomentation of	Sedative	Applied externally.
Thorn Apple, (See Stramonium)		
Unicorn Root, Decoction of	Tonic and Diuretic	Wine-glassful.
Unicorn Root, Fluid Extract of	Tonic and Diuretic	Tea-spoonful.
Uvi Ursa Leaves, Decoction of	Tonic and Diuretic	Wine-glassful 3 or 4 times a day.
Uvi Ursa Leaves, Fluid Extract of	Tonic and Diuretic	Tea-spoonful 3 or 4 times a day.
Veratrum Viride, Fluid Extract of	Arterial Sedative	5 to 6 drops every 3 hours.
Veratrum Viride, Norwood's Tincture of	Arterial Sedative	6 to 10 drops every 3 hours.
Watermelon Seed, Infusion of	Dem. and Diuretic	Wine-glassful 3 or 4 times a day.
Water Pepper Herb, Tincture of	Stim., Diur. and Emm.	Tea-spoonful.
Water Pepper Herb, Fluid Extract of	Stim., Diur. and Emm.	20 to 30 drops.
Water Dock, Decoction of	Astringent and Deter.	Applied externally.
Wahoo Bark, Decoction of	Tonic, Lax. and Alter.	Wine-glassful.
Wahoo Bark, Fluid Extract of	Tonic, Lax. and Alter.	Tea-spoonful.
Wild Ginger, Decoction of	Stim., Arom. and Diap.	Wine-glassful 2 or 3 times a day.
Wild Cherry Bark, Cold Infusion of	Tonic, Astrin. and Sed.	Table-spoonful 3 or 4 times a day.
Wild Cherry Bark, Fluid Extract of	Tonic, Astrin. and Sed.	30 to 40 drops 3 times a day.
Wild Cherry Bark, Syrup of	Sedative	Table-spoonful 3 times a day.
Wild Lettuce, Herb, Infusion of	Narcotic and Diuretic	Table-spoonful.
White Oak Bark, Decoction of	Astringent	Applied externally.
White Mustard Seed, (See Mustard Seed)		
Yellow Herb, Infusion of	Astr., Deter. and Diap.	Table-spoonful.
Yellow Dock, Decoction of	Alterative	Wine-glassful.
Yellow Dock, Fluid Extract of	Alterative	1 tea-spoonful.
Yellow Jessamin, (See Gelseminum)		
Yellow Parilla, Decoction of	Alter., Tonic and Lax.	Table-spoonful 3 times a day.
Yellow Root, Decoction of	Ast., Ton. and Anti-bil.	Table-spoonful.

COMMON NAMES.	PROPERTIES.	DOSES.
Yellow Root, Fluid Extract of	Ast., Ton. and Anti-bil.	25 to 30 drops.
Yellow Root, Tincture of	Ast., Ton. and Anti-bil.	1 tea-spoonful.
Zedoary, Decoction of	Stomachic	Table-spoonful 3 or 4 times a day.

SECOND CLASS—MINERAL SUBSTANCES.

COMMON NAMES.	PROPERTIES.	DOSES.
Antimonial Wine	Emetic	2 to 3 drams.
Antimonial Powder, (James')	Sudorific	3 to 5 grains
Arsenic, Donovan's Compound Solution of	Alterative	5 to 15 drops 3 times a day.
Arsenic, Fowler's Solution of	Alterative and Febrif	8 to 15 drops 3 times a day.
Bismuth, Subnitrate of	Anti-spas., Absor., Sed.	5 grains twice a day.
Blue Vitriol	Emetic	1 to 3 grains.
Blue Vitriol	Lotion	3 or 4 grs. in 1 oz. of Water for external use.
Blue Mass Pills	Alter. and Sialogogue	1, 2, or 3 pills, (5 grains each.)
Calomel	Alterative	½ to 1 grain every second night.
Calomel	Sialogogue	1 grain every 3 or 4 hours.
Calomel	Purgative	5 to 10 grains at night, followed next morning by dose of Oil or Salts.
Corrosive Sublimate	Anti-syphilitic	1-12 to ⅛ grain 2 or 3 times a day.
Iodine, Tincture of	Alterative and Discu	Applied to Scrofulous tumors, etc.
Iodine, Ointment of	Discutient	Applied to Scrofulous tumors, etc.
Iron, Bromide of	Anti-scor. and Uterine	½ to 2 grains.
Iron, Carbonate (Rust) of	Tonic and Chalybeate	5 to 20 grains.
Iron, Citrate of	Tonic and Chalybeate	5 grains in Water 3 times a day.
Iron, Persulphate (Solution) of	Styptic	Applied externally to stop Bleeding, etc.
Iron, Per. Hydrogen	Tonic and Chalybeate	3 to 6 grains.
Iron, Prussiate of	Tonic and Febrifuge	3 to 5 grains 3 times a day.
Iron, Phosphate of	Tonic and Chalybeate	5 to 10 grains.
Iron, Pyrophosphate of	Tonic and Chalybeate	1 to 2 grains.
Iron, Syrup of Iodide of	Tonic, Alter. and Diur.	20 to 30 drops twice a day.
Iron, Sulphate of	Tonic and Astringent	1 to 2 grains.
Iron, Tincture Muriate of	Tonic and Chalybeate	10 to 30 drops.
Kermes Mineral	Diaphor. and Diuretic	1 grain.
Lead, Acetate (Sugar) of	Astringent and Sedat	1 to 3 grains every 3 or 4 hours.
Lead, Acetate (Sugar) of	Astr. and Anod. Lotion.	3 or 4 grains in 1 ounce of Water.
Lead, Goulard's Extract of	Sedative and Anodyne.	1 ounce diluted with 1 pint of Water, applied externally to reduce Inflammation.
Lead, Goulard's Cerate of	Sedative and Anodyne.	Applied to Inflamed parts.
Mercury, with Chalk	Alterative	10 grains.
Mercury, Proto-Iodide of	Alter. and Anti-syphil.	½ to 1 grain twice a day.
Mercury, Deuto-Iodide of	Alter. and Anti-syphil.	1-16 to 1-12 grain twice a day.
Mercury, Red Precip. Ointment	Stimulant	Applied externally.
Mercurial Ointment (Blue)	Resolvent	Applied externally.
Nitrate of Silver, (Crystals)	Astrin. and Anti-spas	¼ to ½ grain 2 or 3 times a day.
Nitrate of Silver, Mild Solution of	Stimulant and Deter	Applied externally.
Nitrate of Silver, Lunar Caustic, (Sticks)	Escharotic	Applied externally.
Potassium, Bromide of	Anti-scorbutic	4 to 10 grains.
Potassium, Iodide of	Alter. and Anti-syphil.	2 to 10 grains 3 times a day.
Zinc, Acetate of	Astringent Lotion	30 to 60 grains in a pint of Water.
Zinc, Sulphate of	Emetic	20 to 60 grains.
Zinc, Sulphate of	Astringent Lotion	30 to 60 grains in a pint of Water.
Zinc, Valerianate of	Tonic and Anti-spas	1 to 2 grains 3 or 4 times a day.

THIRD CLASS—SALINE AND EARTHY SUBSTANCES.

COMMON NAMES.	PROPERTIES.	DOSES.
Alum, Powdered	Astringent	3 to 10 grains.
Alum, Burned	Escharotic	5 to 10 grains, moistened with Water, and applied externally.
Ammonia, Carbonate of	Stimulant	5 to 6 grains every 3 or 4 hours.
Ammonia, Muriate (Sal Ammoniac)	Stimulant	10 to 20 grains.
Ammonia, Water of (Spirits of Hartshorn)	Stimulant and Caustic	10 to 12 drops diluted with Water.
Ammonia, Aromatic Spirits of	Stimulant	15 to 20 drops diluted with Water.
Ammonia, (Volatile) Liniment	Rubefacient	Applied externally.
Borax, Powdered	Nephritic and Deter	15 to 30 grains.

COMMON NAMES.	PROPERTIES.	DOSES.
Chalk, Prepared	Antacid and Astrin	10 to 20 grains in mucilage.
Chalk, Mixture	Antacid and Astrin	2 to 3 tea-spoonfuls.
Chemical Food (Compound Syrup Phosphates)	Tonic	1 to 2 tea-spoonfuls.
Chloroform	Narcotic and Sedative.	30 to 60 drops in mucilage.
Chloroform	Anæsthetic and Narc	½ to 1 tea-spoonful, inhaled.
Chloroform, Liniment of	Anæsthetic and Anod.	Applied externally.
Common Salt, (Muriate of Soda)	Tonic and Stimulant	10 to 40 grains.
Cream Tartar	Aperient and Refriger.	Tea-spoonful in Water.
Epsom Salts	Cathartic	2 to 3 tea-spoonfuls before breakfast.
Glauber Salts	Aperient and Cathartic	1 to 2 drams before breakfast.
Lime, Hypophosphite of	Prophylactic	2 to 3 grains 3 times a day.
Lime, Hypophosphite of, Compound Syrup	Prophylactic	1 tea-spoonful 3 times a day.
Magnesia, Carbonate	Antacid and Laxative	10 to 30 grains.
Magnesia, Calcined	Antacid and Laxative	10 to 30 grains.
Magnesia, Solution Citrate	Purgative	8 to 12 ounces before breakfast.
Potash, Bicarbonate	Antacid and Diuretic	10 to 30 grains.
Potash, Chlorate	Prophylactic	10 to 15 grains dissolved in Water.
Potash, Chlorate, Solution	Gargle or Wash	1 to 3 drams dissolved in 1 pint of Water.
Potash, Citrate	Refrigerant and Diaph.	20 to 25 grains.
Potash, Nitrate (Saltpeter)	Refrigerant and Diaph.	8 to 12 grains.
Potash, Prussiate	Anodyne and Sedative.	10 to 15 grains in Water every 5 or 6 hours.
Rochelle Salts	Aperient	2 or 3 drams before breakfast.
Soda Bicarbonate	Antacid	15 to 20 grains.
Seidlitz Powders	Aperient	1 powder before breakfast.
Spirits Mindererus	Diaphoretic and Diur	2 to 3 tea-spoonfuls.
Sweet Spirits Niter	Diur., Diaph. and Feb.	20 to 60 drops.

PREPARATIONS—EXTRACTS.

To obtain the strength or medicinal virtues of a vegetable or plant, bruise and thoroughly mash them; then, perhaps, add a small quantity of Alcohol, extract the juice, and set in the sun to evaporate until it shall become thick like Honey, put aside for use, in jars so tightly covered as not to admit the air.

TEAS.

TEAS, otherwise called infusions, may be made by putting 1 handful of the herb into 1 pint of Boiling Water, and allowing the same to stand for a quarter of an hour. They should then be taken warm to produce perspiration. If taken cold, drink three or four times a day a full draught, unless otherwise directed by your physician.

DECOCTIONS.

DECOCTIONS are prepared by adding 1½ pints of Water to about 1 ounce of the vegetable, and boiling down to 1 pint, and straining through linen.

INFUSIONS.

INFUSIONS are prepared by adding 1 pint of *Boiling Water* to 1 ounce of the vegetable, and allowing to macerate two or three hours in a covered vessel, then straining.

For Cold Infusions (such as Wild Cherry), use Cold Water.

SYRUPS.

SYRUPS may be prepared by adding 2 pounds of White Sugar to 1 pint of Infusion or Decoction, and dissolved by the aid of heat.

HOW TO ENDURE COLD.

CAPTAIN WEBB, who was swept away in the summer of 1883, while attempting to swim through the rapids below the falls of Niagara, has this related of him: At one time Capt. Webb was in charge of a coasting vessel which sailed for Lapland. He noticed that while he stood shivering on deck, wrapped in furs and flannels, the Laps would go out into the ice-cold water and remain there for hours. How was it that they could stand the cold so much better than he could? He determined to learn the secret, and pleading sickness, sent the vessel home in charge of the first officer. He lived with this people for nine months, studied their diet, their method of living, and lived as they lived. He then returned to England, and remained for two years upon the east coast of England, existing upon blubber and the skins of fish. He had learned the secret of maintaining his normal temperature, and keeping the blood in the veins and arteries in nearly the same state of richness while he remained in the cold water. He found no more blue veins, no more chills. He outwitted the doctors, and discovered, or at least utilized, a scientific fact.

ELECTRICAL SCIENCE.

Its Possibilities, Prospects and Purposes.

BY THOMAS A. EDISON.

I am often asked in regard to the probable progress of electricity in the future, what it is likely to do and what may be done with it. I believe that in time it will be the almost universal form in which energy or power will be used. All who are interested in electrical science have a certain stock of questions. * * I have made a small collection of those oftenest propounded, and will answer some of them.

"Will electricity be the universal beast of burden? Will it carry us and our parcels, hew wood, draw water, cut grain, cook food, heat and light our houses as well as furnish the motive power for mills and factories?" This beneficent result will be attained when electrical science has reached the point when electricity can be produced directly from the oxidation of combustibles instead of interpolating a boiler and steam engine in the process. Prof. Tice defines electricity as the soul of the universe, the vital element of all moving matter; and I am asked if I am of the same opinion. I believe it is merely one form of motion, and the highest yet discovered.

Hon. S. S. Cox is quoted as having said that in the near future, perhaps, no other agent of locomotion, heat, light or power will be resorted to. This opinion is shared by all who have given studious thought to the possibilities of electrical science.

As to the changes which will be effected by electricity within fifty years, I would say that I believe electricity will propel the cars of street and elevated roads, light the city within and without, furnish power for all purposes, work telephones and burglar alarms, deliver the opera, convey parcels, detect and signal fires, operate fire engines, and possibly displace animal locomotion for vehicles.

"The expression, 'storing electricity,' is in common use," says one. "Is such a thing possible?" It is done every day, although as yet not economically enough to warrant its introduction as a commercial undertaking.

Another asks is not the sun the indirect source of all the electricity in the world, or even in the universe? The sun is the source of all energy in our comparatively small planetary system. This energy takes various forms, one of which we call electricity.

I am oftenest asked, "Can electric appliances for light, heat and power ever be sufficiently cheapened to become available to the poor?" This stage of electrical development has been reached in light and power. Electricity will prove itself a boon to the poor, by breaking up aggregated industries. This will be its greatest mission. It will subdivide power so that each operator can have his own, at a trifling cost.

My belief is, that in fifty years, or sooner, we shall reach the electrical millennium, when electricity will do its perfect work, and be the general servitor of the people. The perfection of electrical science will have even a greater effect upon the industries, consequently upon the general condition of the people, than steam has had.

As electricity is a mere infant, it is asserted that its full growth will revolutionize all practical interests. Already, through the telegraph and telephone, it is revolutionizing all commercial methods, and will do so to a greater extent as it is utilized and developed.

I believe that electricity will do greater wonders in transmitting and preserving sound than it has done. The electrical era is not all in the future. It has already begun. Probably fifty thousand persons throughout the world are engaged with the applications of electricity.

"Will it ever be useful to the farmer?" some one asks. I think not, at least not soon, though it may.

A woman wants to know if it will ever lighten the labor of the household; a question I am happy to answer in the affirmative.

The above interesting contribution, for the general reader, to the columns of the *Commercial Gazette*, Cincinnati, was made in the Spring of 1884. We are glad to give place to these views of our native "Buckeye," who has achieved such world-wide honors by his wonderful inventions for utilizing electric force. We were promised an article by a competent writer, a physician, on the remedial virtues of electricity, but he has failed us. While no small proportion of the electrical appliances to be worn upon the person, offered for sale, are not worthy of confidence, we are persuaded of the great value of others in many forms of disease.

That eminent medical authority, Prof. B. W. Richardson, recently says:—

"If we consider that every living creature is as much an electrical machine as each cloud, that the earth itself is the largest and most powerful electrical machine of all, that all things are always exchanging their electricities with each other, it is past contradiction that electricity must be a grand actor in every form of life, whether of health or disease. * * * The subject invites a long essay, but it also calls for more research than has yet been made in regard to it."

MEDICAL FLORA;

OR,

VEGETABLE MATERIA MEDICA.

INTRODUCTION.

IN my medical works, I have fully, faithfully, and honestly told the truth in relation to the consequences frequently resulting from the injudicious use of Mineral Medicines. I now, with confidence, say to you, that great advantages are to be derived from the use of Vegetable Remedies, the gift of our Heavenly Father, who, in kindness and wisdom, has given us, in some of the most simple herbs of the field, the most invaluable medicinal remedies.

Much time is often irrecoverably wasted, and health destroyed, by the pride and ignorance of professional men, in experiments and too great confidence in active remedies, forgetting this important truth, that where the curative powers of Nature fail, Medicine is at an end. Practical experience has fully established in my mind the great benefits to be derived from using Roots, Barks, Herbs, etc., and the necessity of avoiding, as much as possible, Mineral Remedies.

Constant dosing and drugging are greatly injurious, as experience will testify, in the ruin of hundreds of constitutions, which might have been saved by the use of simple remedies. Then listen to my advice, and give Nature the best chance possible to recover herself. The Creator has supplied abundant resources, and each tree, herb and flower possesses some *medicinal virtue.* Instead of testing Nature's remedies for the removal of various complaints, we madly seek many active poisons, unnatural and uncongenial to the constitution, and bring on early old age and a premature grave.

MEDICAL FLORA;

OR,

VEGETABLE MATERIA MEDICA.

BY JOHNSON H. JORDAN, M.D.

ACONITE — (*Aconitum Napellus*), *Wolf's Bane*, *Monk's Hood.* — This is a narcotic poison, but, like many other narcotic vegetables, may often be employed to advantage as medicine, if used with care and in a proper manner. It is an herb or plant, native to most parts of Europe, and is cultivated to some extent, as an ornament, in the gardens of this country. It grows to the hight of four or five feet, bearing a long stem or spike of deep blue and very beautiful flowers, which appear in May and June. The root is said to be the most powerful part, but the leaves are also used.

MEDICAL PROPERTIES AND USES. — Aconite is mostly used in the form of a tincture, made by adding 1 ounce of the root or herb to 6 ounces of Alcohol, and letting it digest for two weeks; though it is also used in substance, and in the form of an Alcoholic Extract. It will probably never be necessary for you to prepare the article for use; for, should you ever have occasion to use it, you can always get it at a drug store, especially the tincture, which is the only form in which you would be likely to use it. It is by many considered a valuable remedy in Fevers and Inflammations of a high grade, in Nervous and Neuralgic Affections, and in Inflammatory Rheumatism and Gout. It is probably more beneficial in cases of Inflammatory and high Fevers than in any other complaints. Dose: to a grown person, from six to ten drops of the tincture three or four times a day, in a little water. It should not be continued more than two or three days at a time, unless given in much smaller doses. It is one of the principal remedies in the Homœopathic practice, and when given in that way is a most valuable remedy in all Febrile Affections. As an approach to the Homœopathic plan, add one drop of the tincture to an ordinary glass tumblerful of clean, pure water, and give a teaspoonful of this every one, two, or three hours. I have seen it pro-

duce the most decided effects, when thus given, in allaying Fevers; but remember that it is an acro-narcotic poison, and therefore should never be given in over-doses.

Agrimony — (*Agrimonia Eupatoria*). — Called also Stickwort, and sometimes Cocklebur — though it is not what is known everywhere as the common pestiferous Cocklebur. It is a native of both Europe and America. It is an herb growing from one to two feet high, with rough, ragged, and somewhat hairy leaves. The blossoms are yellow, and are found on a long spike or stem at the top, which are followed by small bristling burs, that are apt to stick to clothes when brought in contact with them, and are often seen in great quantities sticking to the wool on sheep.

Medical Properties and Uses. — Both the root and the leaves are used, but most usually the leaves only. It is a mild and safe astringent and somewhat tonic, and is used in the form of a tea or decoction in Bowel Complaints, Fevers, and in the form of Bitters, combined with other bitter tonics, in General Debility. It is also recommended by some as a good remedy in Scrofula, Gravel, Scurvy, and Jaundice. Dose: may be used freely in infusion, decoction or as bitters. It can generally be found at Botanic drug stores.

Allspice — (*Myrtus Pimenta*). — Allspice, which is a common article in almost every family, is the berries of a small tree that grows in Mexico, Jamaica and other parts of the West Indies, and in South America. The tree is an evergreen, and grows to the hight of twenty or thirty feet. Most of the Allspice in this country comes from the Island of Jamaica. The berries are gathered a little while before they are ripe, carefully dried, and then boxed or put into bags, ready to be sent off. The Pimento Berries were supposed to combine the flavor of Cinnamon, Nutmeg, and Cloves — hence the name of *Allspice*.

Medical Properties and Uses. — Allspice has a moderately warm and quite agreeable flavor, and is astringent and aromatic, as well as slightly stimulant. As a medicine, it is mostly used in cases of Diarrhea and Summer Complaint. For such purposes, it may be given freely in the form of a tea or syrup. It forms part of a highly valuable compound, used with great success in many parts of the country, as a safe domestic remedy for Bowel, or Summer Complaints — which is made as follows: Allspice, ½ ounce (or 2 tablespoonfuls); Cinnamon Bark, ½ ounce; Cloves, ¼ ounce; White Oak Bark, ¼ ounce; bruise all and simmer slowly in 1½ pints of Water, down to ½ pint; strain; then add 4 ounces of Loaf or White Sugar — bring it to the boiling point again to melt the Sugar, and then add half as much good Brandy as there is of the syrup, and it is ready for use.

To be given cold, in doses of from a tea-spoonful to two table-spoonfuls, according to the age of the patient, and repeated from three to six times a day, according to symptoms. This is an excellent remedy in all cases of Diarrhea and Summer Complaints.

Aloes.—(*Aloe Perfoliata — Aloe Spicata*).—This beautiful and valuable plant, or shrub, is a native of South Africa, where it grows in great abundance, and flowers most part of the year. From good authority, we learn that about fifty miles from the Cape of Good Hope the Aloe grows in great abundance; large tracts of land being almost entirely covered with it, which renders planting unnecessary. It is cultivated also in the Islands of Barbadoes and Socotra, as well as some others; hence we have what are called several varieties, as Barbadoes Aloes, Socotrine Aloes, etc.; and as that brought from Socotra is, from some cause or other, supposed to be the best, we find that nearly all in this country is bought and sold as *Socotrine Aloes!* But the truth is, nearly all that we find in the drug stores and apothecary shops is the Cape Aloes (*Aloe Spicata*), and is brought from South Africa. The article used as medicine, usually called Aloes, is in the form of a gum or resin, and is made from the juice which runs from the leaves of the plant, when cut. The manner of obtaining it is to cut the leaves from the plant and place them perpendicularly by the side of each other in a suitable vessel, so as to afford an opportunity for the juice to flow out. It is afterward collected in a large, shallow vessel, and exposed to the rays of the sun, till it evaporates and becomes of a proper consistence — that is, till it becomes hard.

Medical Properties and Uses. — Aloes is more used, perhaps, than any other one article of medicine, and is combined more or less with nearly every patent medicine in the country. It is a stimulating cathartic or purgative medicine, acting chiefly upon the lower and large intestines, and promotes their peristaltic action, and by that means causes the expulsion of any accumulation in them; from its operation being almost entirely confined to the lower portion of the intestinal canal, or rectum, it also possesses considerable emmenagogue properties, or acts on the womb, and promotes the Menses, or Courses. This may be attributed, and no doubt is the case, to a sympathetic extension, or irritation through the rectum to the uterus, or womb. With its other powers, it has the property of slightly stimulating the stomach. It is, therefore, in small doses, an excellent remedy in habitual Costiveness, or when the bowels are bound up, and attended with a derangement of the digestive organs. It is good in the treatment of Ascarides, which means little worms about the fundament, or lower bowel, in which case it should be given as an active purga-

tive; but it is more used to regulate the womb, and bring on a regular flow of the Menses, than any other medicine, and enters into every patent medicine sold for this purpose. The medium dose of Aloes is ten grains; but as a laxative, or gentle purge, it will often operate in the quantity of two or three grains; and, when an active impression is required, the dose may be increased to twenty grains. In consequence of its exceedingly bitter taste, it is most conveniently administered in the shape of pills. A good and innocent pill to keep the bowels gently open, is equal quantities of Aloes and Rhubarb, a little Castile Soap, and a few drops of the Oil of Peppermint. Three or four of these pills, taken on going to bed, has a very fine purgative effect, and is valuable to those who are subject to Costiveness. On account of its direct action on the lower bowels or rectum, Aloes should not be used in case of Piles, or where there is a tendency to that painful affection. But in all affections of the Stomach, Liver, Womb, habitual Costiveness, or Headache, it is an invaluable purgative. The dose is from five to fifteen grains, for a grown person, and from one to four grains for a child.

Amaranth — (*Amaranthus Hypochondriacus*).— Called also Prince's Feather, Lovely Bleeding, but is well known by the common name of Cockscomb, being cultivated in gardens as an ornamental plant. The whole plant is of a reddish-purple color, and its flowers are of a deep bright red, resembling the comb of the chicken-cock.

Medical Properties and Uses.— The Amaranth is valuable as a medicine, mainly on account of its astringent properties, in certain affections. The leaves is the part used, and in the form of a strong tea or infusion. It is recommended in Diarrhea, Dysentery, or Bloody Flux; and is considered especially valuable in cases of severe Menorrhagia, that is, excessive and painful Menstruation. In such cases, it is to be used freely in the form of a strong tea.

American Sarsaparilla.—(*Aralia Nudicaulis*).—The Aralia Nudicaulis, or American Sarsaparilla, is a species of the Spikenard (*Aralia Racemosa*), resembling it somewhat in appearance, but has larger leaves, and does not grow so high. Its hight is usually from one to two feet, having a large, long, soft, fleshy, and creeping root (which is the part used), of an aromatic and rather fragrant, balsamic odor, and a sweetish, aromatic taste. It bears two or three bunches of yellowish green flowers, followed by bunches of small berries, somewhat resembling the common Elder Berries. It grows in sandy, rocky and rich upland soils, in the Northern and Middle States. Not common in the Western States.

Medical Properties and Uses. — It is alterative, and somewhat stimulant, and used in the form of decoction and syrup, as a substi-

tute for the foreign or Smilax Sarsaparilla, and by many is considered fully as good. Indeed some physicians consider it better. Useful in constitutional diseases, such as Scrofula, Syphilis, Skin Diseases, and wherever an alterative and purifying medicine is needed. May be used either alone, or in combination with other alteratives. Dose of decoction or syrup: half to a wine-glassful three times a day.

Angelica — (*Angelica Archangelica*).— The Garden Angelica, called also Archangel. The root, stem and seeds are used; but the root is preferable. This article is a native of Southern France, but is cultivated in the gardens of this country.

Medical Properties and Uses. — The root has a bitter, pungent taste, but a fragrant, agreeable smell. It is aromatic and carminative, that is, calculated to remove Spasmodic Pain in the Bowels, and Flatulence or Wind from the Stomach. Though it is, perhaps, not so good for this purpose as tea of the seeds of Cardamom, Anise, or Caraway. Angelica is principally given in the form of a tea or infusion, and may be used freely. It is also recommended in Nervous Headache, Pains in the Breast and Stomach, and Feeble Digestion.

Anise Seed — (*Pimpinella Anisum*). — The seeds of the common Garden Anise. This plant is cultivated in all our gardens for medical purposes, and is too common to need further description.

Medical Properties and Uses.— The seeds are useful in Dyspepsia, and very much used for the Diseases of Children and Infants. For Flatulence, or Wind, Griping and Colicky Pains, etc., an infusion, or tea, made of the seeds, may be given. For Dyspepsia, the Oil dropped on Sugar is preferable. Anise has a fine aromatic smell, and a warm, agreeable, sweetish taste. The Essence of Anise, which is made by adding the Oil to Alcohol, in the proportion of 1 part of the Oil to 8 parts of Alcohol, is often used to flavor, or render more pleasant, other medicines and compounds. Dose: of the Oil, from two to ten drops; Essence, one to two tea-spoonfuls. A tea, or infusion of the seeds, which is generally used for children, may be given in doses from a tea to a table-spoonful, or more, and repeated at pleasure. Found in all the drug stores.

Arnica — (*Arnica Montana*), *Leopard's Bane.* — This is a small plant, of about a foot in hight, and is found chiefly in the mountains of Northern Europe, and, for certain valuable purposes, is one of the most important articles in the Materia Medica. The flowers are the part used, and then in the form of tincture, which is made by adding 2 ounces of Flowers to 1 pint of Alcohol, and allowing it to stand two weeks. From one of its names you may perceive that Arnica is also a poison, and therefore is never to be used in large doses.

Medical Properties and Uses. — It is mostly used as an external

remedy, and in cases of Bruises, Contused Wounds, Strains, and the like. It is also a standard Homœopathic remedy, and its best effects are obtained in using it in a somewhat minute quantity, or in a dilute form. In all cases, therefore, of fresh Bruises, or Injuries of any kind, that will come under that head, add Tincture of Arnica, say 1 tea-spoonful to 1 tumblerful, or even 1 pint of Cold Water; mix well, by pouring a few times back and forth from one vessel to another; then apply a bit of muslin or bandage wet with this, to the bruised part, and keep it wet by occasionally adding of this Arnica Water, and you will soon find it exceeds all other remedies in such cases that you have ever tried. In case of Internal Bruises or Injuries, as from a fall, or the like, give the patient internally, at the same time, 2 or 3 drops of the Tincture, in a sup of water, and repeat every two or three hours for a few times, or as long as the symptoms seem to require it. Tincture of Arnica is a remedy that every family should keep constantly in the house, and every person traveling should carry a vial of it with him. A little of the Tincture added to Alcohol, in the proportion of 10 drops to 1 ounce of Alcohol, is a splendid application in cases of Rheumatism of the Joints, and in Pains in the Feet or Ankles, caused by walking. Arnica is also recommended by some as a remedy in other affections; but there is nothing in which it seems to act so like a specific, and is so valuable, as in fresh Wounds and Injuries to the flesh. The Tincture or Flowers may be found at the drug store.

Arrow Root — (*Maranta Arundinacea.*) — Arrow Root is an article found in the drug stores, in the form of starch; indeed it is starch, made from the root of this plant, which grows in the West Indies. It is used as a light, nutritious diet, for children after Weaning, and for delicate persons during Convalescence, in the form of a jelly, made by boiling a little of it, and seasoning it with Sugar, Lemon Juice, Fruit, Jellies, and the like. It is generally liked by children, and, next to Tapioca, is, perhaps, the best article of the kind known. It is very good as a diet during recovery from Bowel Complaints, Fevers, and the like, both for grown persons and children.

Asafœtida — (*Ferula Asafœtida*). — This is the most powerful of all the fetid gums. It is obtained from the Asafœtida plant, which is a native of Persia. The drug, or gum, is the inspissated juice, obtained from the plant by scarifying it, and then evaporated in a similar manner to that of the Aloe juice. Asafœtida may be easily distinguished by its strong fetid smell, resembling very much that of Onions. The best article is of a clear, pale reddish color, variegated with numerous white specks.

Medical Properties and Uses. — Asafœtida is a most valuable

remedy in many cases — especially in Hysterics, Flatulent Colics, and Nervous Affections. It is expectorant, anti-spasmodic, emmenagogue, and a nervous stimulant. When used as an anti-spasmodic, it should be given in form of tincture, from one to two tea-spoonfuls at a dose, for a grown person. In other cases, it is mostly used in the form of pills. Dose: from five to ten grains, and sometimes more.

Balm — (*Melissa Officinalis*).— Balm is one of the fragrant herbs, is a native of Europe, but is cultivated generally in the gardens of this country. It flowers in June, and the best time to collect the plant for medicinal purposes is just before it flowers.

Medical Properties and Uses.— It is diaphoretic, anti-spasmodic, and refrigerant, and hence makes a pleasant and cooling tea in Fevers, and may be drank freely. Balm Tea is also good in painful Menstruation.

Balm of Gilead — (*Populus Candicans*).— This is a small tree, well known in the Northern States, being cultivated as an ornamental tree. It is a native of Canada, and northern regions of Europe. Its hight in the States is usually from fifteen to twenty feet, though sometimes growing much higher. The buds, which are the parts used, are filled with a rich balsamic gum, of a bitterish, pungent taste, but fragrant, agreeable odor.

Medical Properties and Uses.— Balm of Gilead Buds are expectorant, diuretic, somewhat stimulant, and tonic. Useful mainly in Coughs, Affections of the Lungs, and of the Kidneys and Urinary Organs. They have been found useful also in Rheumatism, Scurvy, and in Leucorrhea, or Whites. The manner of using them is in the form of tincture, which is made by putting 1 or 2 ounces of the bruised buds into 1 pint of Alcohol or Proof Spirits, and let them digest for a week or two. Dose: from a tea to a table-spoonful, three or four times a day. By adding a little Honey to this Tincture, say ½ part Honey, it forms an excellent remedy for all ordinary Coughs.

Balmony — (*Chelone Glabra*), *The Herb.* — This plant, variously called Bitter Herb, Snakehead, Shell Flower, and Turtle Bloom, is found near the borders of streams, and in thickets and meadows where the ground is wet. It has a fibrous root, which sends up a number of erect, smooth, bluntly four-cornered stems, from three to five feet high, and occasionally branched near the top. The leaves are opposite, tapering, five or six inches long, sharply pointed, and edged with teeth. The flowers are white, tinged in some instances with a delicate shade of red. They are disposed in a cluster, and do not bloom until late in the autumn. They are remarkable for their resemblance to the head of a snake, hence the familiar name of

Snakehead. The herb should be collected in dry weather, and as soon as it is in bloom, as the leaves frequently become mildewed after that time. It should be dried in the sun, or in a warm chamber or loft, and carefully guarded from a moist or damp atmosphere, or it will acquire a dark or black color. The Balmony can be found at most of the drug stores.

Medical Properties and Uses.— This herb is exceedingly bitter, and has been long known in New England as a Tonic and a Laxative. It is employed in Costiveness, Dyspepsia, Loss of Appetite, and General Languor, or Debility. Given to children afflicted with Worms, it will generally afford relief. It is a valuable medicine in Diseases of the Liver, and in Jaundice tends to remove the yellow tinge from the skin and eyes. An even tea-spoonful is a dose; or a table-spoonful steeped in a teacupful of Boiling Water and drank during the day. In the treatment of Jaundice, and in most cases where it is used as a Bitters or Tonic, it is best to combine it in equal portions with Poplar Bark and the Golden Seal, or Yellow Root. This is an excellent remedy in Jaundice, and in all cases of derangement of the Liver and the Digestive Organs. It strengthens the system and improves the appetite. From an even to a heaping tea-spoonful may be taken two or three times a day.

Balsam of Copaiva.— Balsam Copaiva (or Copaiba, as it is more technically called) is a light yellowish-colored fluid, about the consistence of fresh honey, and is obtained, like the other balsams, from a large tree growing in South America, especially in Brazil, and also in some of the West India Islands, called the Copaifera-tree. There are several varieties of the Copaifera, which yield the balsam, as the *Copaifera Jacquini, Copaifera Guaianensis, Copaifera Oblongifolia.* The balsam or juice is obtained from the tree by making incisions in the trunk and limbs, just after the wet season, and large quantities are said to exude in a few hours. At first it is thin and colorless, but soon becomes thicker, and slightly yellowish. It is imported from the ports of Brazil, Maracaibo, Carthagena, and the West Indies; but that mostly in use in this country is from Brazil, and is considered the best. Found in all the drug stores.

Medical Properties and Uses.— Balsam Copaiva is mostly used for its diuretic properties, and its specific action on the mucous tissues of the Urinary Organs. It is also stimulant and slightly cathartic. It produces a sensation of heat in the throat and stomach, when swallowed, and in large doses, acts as an Irritant. It is used mostly in Chronic Mucous Affections, as Chronic Gonorrhea, Gleet, Leucorrhea, Chronic Dysentery, Irritation of the Bladder, and in Chronic Bronchitis. It is an important ingredient in most of the compounds

and recipes for Gonorrhea, being usually combined with such articles as Sweet Spirits of Niter, Oil of Almonds, and Spirits of Turpentine, in about equal parts, and taken in tea-spoonful doses three or four times a day. Balsam Copaiva is also a most effectual remedy for females in Leucorrhea, or the Whites. Dose of the Balsam: from twenty to forty drops, two or three times a day.

Balsam of Fir — *Called also Canada Balsam.* — This is an article found in all the drug stores, and is obtained from a species of the Balm of Gileam, called *Abies Balsamea*, being the juicy or resinous exudation of the tree. This tree grows much higher than the Balm of Gilead, and is also found growing wild in Canada, Nova Scotia, and some of the Northern States. The Canada Balsam, or Balsam of Fir, is a semi-transparent fluid, nearly colorless, or of a light yellowish tint, about the consistence of honey or thick molasses; is of a slightly bitter taste, and of rather an agreeable odor, somewhat resembing turpentine. If exposed to the air for a sufficient time, it will become thick, concrete and hard, like rosin.

Medical Properties and Uses. — Balsam of Fir is stimulant, diuretic, expectorant, gently laxative, and of a healing nature. In large doses it will act as a Cathartic. Internally, it is good in Coughs, in Gonorrhea, Gleet, Whites, Affections of the Urinary Organs, and Ulceration of the Bowels. Externally, it is good applied in small quantities to Sore Nipples of nursing females, to fresh Cuts, Wounds, as well as old and indolent Ulcers and Sores. It also forms an important ingredient in some Healing Salves. Dose: for Coughs, five to ten drops, three times a day, on a little Sugar; for the Whites, Gleet, and the like, twenty to thirty drops, in the same way, three times a day.

Balsam of Peru. — This is a thick balsamic fluid, of a dark red or brown color, about the consistence of thick molasses, of a bitterish acrid taste, and pleasant aromatic smell. It is the resinous juice obtained from a large tree which grows in Peru and other parts of South America, known by the technical name of *Myrospermum Peruiferum*. Balsam of Peru may be found in the drug store.

Medical Properties and Uses. — It is a stimulating expectorant, and somewhat tonic or strengthening, acting especially on the mucous membranes of the system. It is used mostly in Chronic Affections of the Lungs, in Coughs of long standing, in Gonorrhea, Gleet, Leucorrhea, and Chronic Mucous Inflammations of the Stomach and Bowels. It is also applied externally to old Sores, Wounds that do not heal readily, and, in the form of an Ointment, made by melting with it an equal quantity of Tallow, to Ringworm, Scald-head, and the like. The dose is from ten to thirty drops, to be taken the same

as Balsam of Fir, or may be given, especially for Coughs and Lung Affections, in a little solution of Gum Arabic.

Balsam of Tolu. — This is an article obtained from a tree found also in some parts of South America, known in Botany by the name of *Myrospermum Toluiferum*, and is said to resemble the tree from which the Peru Balsam is obtained. It is undoubtedly of the same species. Incisions are made into the body of the tree, from which the juice or balsam exudes, like the sap from the sugar-tree, and is received into vessels, and allowed to concrete or thicken. It is of a yellowish-red or brown color; of a sweetish, pungent, agreeable taste; very fragrant, and usually soft and tough, but by age and exposure to the atmosphere, becomes hard and brittle, like rosin. It soon becomes soft by chewing, and readily melts by heat. It is readily dissolved in Alcohol or Spirits, as well as in Ether and Essential Oils. May be found in all the drug stores, in substance, in tincture, and in syrup.

Medical Properties and Uses. — Balsam of Tolu is a soothing expectorant, and somewhat tonic and stimulant — useful in Chronic Catarrhs, or Colds and Coughs, and all chronic or long standing affections of the Lungs, Bronchitis, and the like. In such cases its action is very similar to that of Balsam of Peru, and may be used instead of it; but is generally to be preferred because of its more agreeable flavor. Syrup or Tincture of Tolu Balsam is often added to Cough Mixtures, rendering them more pleasant, as well as often more effectual. When combined with other articles, as a Cough Medicine, such as Tinctures Blood Root, Lobelia, Black Cohosh and Syrup of Squills, it may be in equal proportions — say 1 ounce of each. The dose of the compound would be one or two tea-spoonfuls, once every hour or two. The dose of the Balsam alone is from ten to twenty grains. It is seldom used alone.

Barberry. — (*Berberis Vulgaris*). — This shrub blossoms in April and May; the berries ripen in June. It is found from Canada to Virginia, in the Eastern States, on mountains, hills, among rocks, and so on. It is a common shrub in the East, but very rare, or scarce, in the Western States; occasionally it is found in rich soils. The whole shrub, even the root, is acid. The berries have likewise a pleasant, acid taste. The bark is yellow and bitter.

Medical Properties and Uses. — By boiling the bark and mixing it with Hard Cider, it is a good remedy in Jaundice. The berries contain a very acid and red juice, which forms a pleasant and very useful drink in Flux and Malignant Fevers, for abating Heat, quenching Thirst, raising the Strength, and preventing Putrefaction. It being a powerful anti-septic, it is very valuable in all cases of Putrid Diseases, such as Bloody Flux, Putrid Sore Throat, and the

Diarrheas that often attend Typhus Fevers. Persons who have been attacked with a Putrid Fever, accompanied with a Bilious Diarrhea, have been entirely relieved by eating the fruit of the Barberry. The berries are highly recommended in Dysentery, made into a syrup, infusion or decoction ; and in either form may be used freely.

Bayberry — (*Myrica Cerifera*). — This shrub is frequently called Candleberry and Wax Myrtle. It grows from New England to Louisiana, being a native of the United States. It inhabits both dry and wet soils. It is, however, found in old fields, and on the sides of stony hills. Its growth is much influenced by soil and climate. In Louisiana it grows to the hight of ten or twelve feet, but in Massachusetts, where it is very abundant, it seldom grows higher than four or five feet. I consider this plant to be one of the most valuable of this, or any other country. It is frequently made into wax, known as Bayberry Tallow, one bushel of the berries yielding about four pounds of the wax. This wax is also used for a variety of domestic purposes, entering into the composition of Shaving Soap, Tapers, Sealing Wax, Blacking, and mixed with Tallow in the manufacture of Candles, which makes them give a very clear light and a delightful smell. The stem of the Bayberry is covered with a grayish bark, thickly branched at the top ; leaves narrow, tapering at the base, twisted in their mode of growth, covered with a down which is scarcely to be seen, the upper part of the leaf a shining green, and near the point a few teeth. Flowers in May, followed by small berries ; which adhere to the branches, either separately or in clusters, green at first, gradually change to a grayish tint, and in the fall to a dull white color. The root should be collected early in the spring, or late in the fall, freed from dirt, then beat with a mallet or club to separate the bark. This bark should be perfectly dried without exposure to the wet or damp, it being the part used, and is generally to be found in the drug stores in the form of a fine powder.

Medical Properties and Uses. — The bark of the root is found to be a sovereign remedy in Scrofula in a state of Ulcer, applied in the form of Poultice, by bruising the bark, simmering it in Rain Water, and applying the poultice to the Ulcer, and injecting a strong decoction into the Ulcer or little Crevice. The poultice is benefited by adding some Slippery Elm Bark, so as to form a poultice of proper consistency. The powder may also be used for a poultice, mixed with a little Elm Bark. The tea is useful as a wash in all old Sores. In the Eastern States, it is used as a remedy in Scarlet Fever with great success, also as a gargle in Putrid or Ulcerated Sore Throat ; and is said, when properly administered, to be useful in almost every form of disease. When taken in very large doses, it produces a narcotic

effect, or drowsiness ; when the stomach is very foul, it may act as an Emetic. It is valuable as a remedy in Diarrhea, Dysentery, etc., on account of its astringent properties. A decoction administered in the dose of a teacupful about three times a day, generally effects a cure. The dose is a table-spoonful of the Powdered Bark steeped in a teacupful of Boiling Water, and sweetened to the taste. The Bayberry is one of the principal ingredients in the celebrated Thomsonian Composition Powders.

Beech Drops — (*Epifagus Virginianus*), *Cancer-Root.* — This is a most singular plant, if indeed it can be called a plant. It seems more like a fungous growth than a living plant. It is found growing under beech-trees, springing, apparently, from the roots of that tree. It comes up in stems from six to fifteen inches in hight, and divides into numerous branches, having no leaves, but a few scattered little scales that probably answer for leaves ; the whole plant being of a dark yellowish, or light brown color, and looks like a miniature dead tree. The root is of a bulbous shape, of the same color as the stalk, with a mat or bunch of short crooked fibers at the bottom.

Medical Properties and Uses. — Both the tops and root are used. It is astringent, with a slightly bitter and nauseous taste. It is used by many as a remedy in Dysentery ; also as a gargle for Sore Mouth, generally along with other astringents. It may be given internally in the form of a tea ; or, in substance, in doses of ten to twenty grains. It has often been applied to old and foul Ulcers, by sprinkling on the fine powder ; and by some is considered a great Cancer remedy, applied either in powder, or a salve made of the powder and other ingredients. A strong tea of the Beech Drops is also good to wash old Ulcers and Cancers.

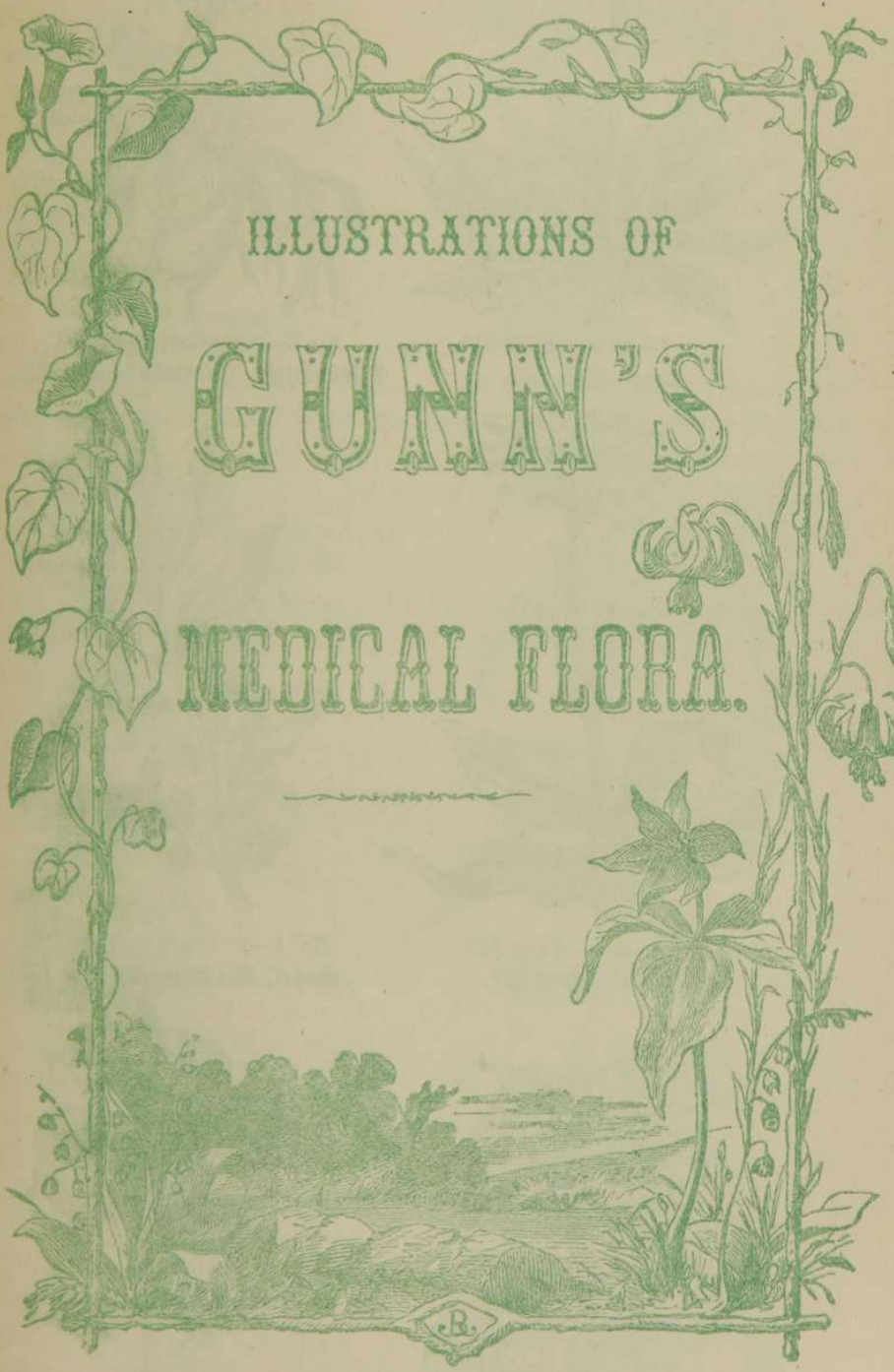
Belladonna — (*Atropa Belladonna*). — Known also as deadly Nightshade. This is a herbaceous plant, growing to the hight of about three feet, having a soft, sprangled, creeping root ; each bunch of roots sending up four or five stalks, which are of a purplish color, and covered with a sort of fur or soft hair. The leaves, which is the part mostly used, are soft, oval-shaped, and of a dull green color, growing in pairs. The flowers, which appear in June and July, are of a dark purple color at the edges or border, becoming paler toward the stem. The plant is a native of Europe.

Medical Properties and Uses. — Belladonna is a narcotic poison ; and when taken in large doses, it exerts a powerful influence upon the brain and nervous system, producing a dilatation or an enlarging of the Pupils of the Eyes, tending to Dimness of Sight, Vertigo, Deafness, Confusion of Mind, with Thirst, Dryness of the Mouth and Throat, Difficulty of Swallowing, Sickness at the Stomach, and often

ILLUSTRATIONS OF

GUNN'S

MEDICAL FLORA.



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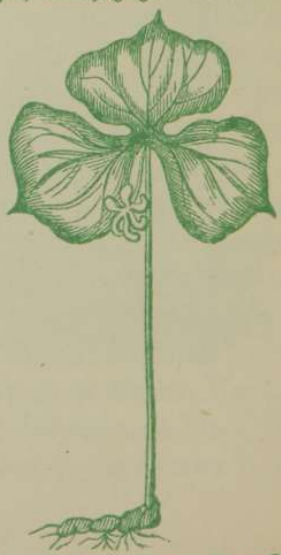

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a sort of Eruption on the Skin, like the Measles; and in excessive doses, Delirium. It is a valuable medicine, when used carefully, and in proper doses. In cases of Spasms, Convulsions, Epilepsy, Neuralgia, Mania, Palsy, Gout, Rheumatism, Painful Menstruation, Amaurosis, and all Nervous Affections, it is often used with great advantage. It is mostly used in the form of extract, which can always be had in the drug stores. Dose of the powdered leaves: from one to three grains; of the extract, from half a grain to two grains — once or twice a day. The dose may be gradually increased each day, till double the quantity or more can be taken with safety; but it should always be used with caution, and the symptoms carefully watched.

Benne Leaves—(*Sesamum Indicum*).—This plant grows from two to four feet high, and though a native of the East Indies, is cultivated in the gardens in this country, especially in the Southern States.

Medical Properties and Uses. — The leaves, which is the part used, contain mucilaginous, gummy matter, readily imparted to water (like the Elm Bark), forming a bland, nutritious, and healing mucilage — very good in Bowel Complaints. For this purpose, two or three of the fresh leaves may be put into a pint of Cold Water, and let stand for a little while, when it soon becomes ready for use, and may be taken freely, in frequent doses, the same as any other innocent mucilage. The Benne Leaves are very generally used in the South, in Summer Complaints, Diarrhea, Dysentery, and other similar affections. It is highly recommended by the most eminent physicians. I have seen it extensively used in all the West India Islands, also in all the warm climates, in Diseases of the Bowels. Thousands of persons have been benefited by the use of these leaves; and I recommend them as an invaluable remedy in the above diseases, so distressing among children, and often so fatal in the summer season. Grown persons will find them equally beneficial in all Complaints of the Bowels. Children readily drink the water in which the Benne Leaves have been soaked, without discovering any unpleasant taste, smell, or color. The Benne may be cultivated in any part of the United States. This valuable plant should be particularly attended to for its many virtues.

Beth Root—(*Trillium Latifolium*).— Beth Root is common to this country, growing in rich woodland soils. It has a stem from six to ten inches high, smooth, of a purplish color, with three leaves at the top, and a flower of either a white, red, purple, or mixed color; the root is thick, oblong, wrinkled, somewhat like that of the Ginseng or the Indian Turnip.

Medical Properties and Uses.— It is astringent, anti-septic, and somewhat expectorant and tonic. Useful in all kinds of Hemor-

rhages, and especially in immoderate flow of the Menses, Flooding, and the like; also good in Dysentery, Diarrhea, Cough, Asthma, and Night Sweats. Dose: a tea-spoonful of the pulverized root, repeated often; or the infusion may be used freely.

Bitter Root — (*Apocynum Androsæmifolium*).— This is a species of the Milk Weed or Indian Hemp, and is most commonly known in the country by the name of Milk Weed. It has a straight stem or stalk, grows usually from three to four feet high, and often branched toward the top. The stalk is of a reddish color, particularly on the side toward the sun. The leaves come out opposite each other, are oval in shape, from two to three inches long, and smooth. The flowers are in loose clusters, white, and slightly tinged with red, followed with long slender pods, hanging in pairs. The stalk is covered with a tough bark, like Hemp. When green, the stalk, leaves and root contain a milky substance, which escapes if they are cut or broken. It grows in all parts of the United States, and is generally well known by the country people. The root, which is the part used, is usually larger than the stalk, running deep into the ground, generally two or three roots to each stalk, though sometimes but one. It has a thick cortex or bark, which is the part used as medicine, and is of a disagreeable bitter taste, when fresh.

Medical Properties and Uses.— The Bitter Root is tonic, laxative, diaphoretic, and in large doses, emetic. It is considered an excellent remedy in Chronic Liver Complaint; valuable, when combined with other Bitter Tonics, as Wild Cherry-tree and Poplar Bark, Golden Seal and Yellow Parilla Root, as Bitters, in the treatment of Dyspepsia, and as a Restorative after the Fever and Ague. The root should be gathered in the fall, and the bark of the root or outside part, after being thoroughly washed and scraped clean, should be stripped off and dried, when it may be easily pounded in a mortar. It may be given in fine powder, in doses of ten grains two or three times a day, as a Laxative and Alterative, to act on the Liver; and also for Dyspepsia. It may also be made into an extract by boiling in water and evaporating, the same as other extracts; and can then be used in the form of pills. Dose of the extract: from three to six grains, once or twice a day.

Apocynin.— This is the concentrated remedy, made from the Bitter Root, or Apocynum, the same as the other concentrated Eclectic Remedies, and can generally be found in the drug stores, or in the shops of Eclectic Physicians. It may be used instead of the root in most cases, and is handier on account of the smallness of the dose, which is from half a grain to one or two grains, according to the effect you wish to produce. In half-grain doses, once or twice a day

it acts as an Alterative; in two or three grain doses, as a mild Purgative. I have found the most benefit from this root, however, when used in the form of Bitters, in cases of Liver Complaint, Constipation of the Bowels, and Dyspepsia.

Bitter Sweet—(*Celastrus Scandens.*)—The Bitter Sweet is a woody vine, growing, in favorable situations, to the hight of thirty or forty feet. It twines around the branches of trees in the same manner as the grape-vine, and creeps upon hedges, fences and rocks. It has various names—Staff Tree, Red Root, Fever Twig, and Waxwork. It is common throughout the United States, thriving best in a rich, damp soil. The root is creeping, of a bright orange color, about the size of the middle finger or thumb, and several rods in length. The stem is covered with a brown or reddish bark, and rarely exceeds an inch in diameter. The leaves are somewhat tapering at the base, with small teeth along the edges, and a sharp and extended point. The blossoms are of a greenish yellow color, and very fragrant, blooming the first or second week of June. The berries grow in clusters, and remain upon the vine during winter. Early in the autumn, they are of an orange color, but after the first or second frost, the outward covering divides into three valves, which, turning backward, display a beautiful scarlet berry in the center. From this plain description, it will be impossible to mistake the vine. There is a plant sometimes taken by mistake for the Bitter Sweet, on account of its being called by the same name, although it has no resemblance to it. It is the Woody Nightshade, medically called *Solanum Dulcamara;* which plant possesses poisonous properties, especially the berries, and therefore the necessity of this caution. The Solanum has a slender vine-like stem, seldom exceeding seven or eight feet in length, with leaves of a dull green color, and clusters of elegant purple blossoms, which remain in bloom from June till August, and are followed with a scarlet-red juicy berry, containing several white flat seeds.

Medical Properties and Uses.—The bark of the root of the Bitter Sweet has a sweetish and rather a sickening taste; it is both a powerful and useful medicine, although, like most of the valuable medicinal plants of our country which Nature has so bountifully furnished to our hands, its virtues are but little known or appreciated, and, if at all, but by a few. It increases all the secretions and excretions, particularly perspiration; acts gently as a diuretic, or increases the flow of the urine. It is highly valuable in Liver Complaints, and in all General Weakness, in Disorders of the Skin, and Rheumatism; in Scrofula, or King's Evil, it is one of the most valuable medicines; also in Swellings, Ulcers, Jaundice, Weakness, and Obstructions in Women. It is to be taken inwardly. Boil ½ pound of the bark of the

root in 1 gallon of water, down to 2 quarts, and take a wine-glassful two or three times a day. It may be made into a syrup, by adding Sugar; and is often used in this form, with other articles, such as Sassafras, Yellow Parilla, Yellow Dock Root, and the like, which make a far better Alterative than the celebrated Sarsaparilla Syrup. It is excellent in Scrofula, and all Diseases of the Skin. To make Bitter Sweet Ointment, add ½ pound of the bark of the root to 1 pound of Lard, simmer slowly over the fire for several hours, then strain for use. It is good for Swelled Breasts, to discuss or drive away Tumors or Swellings, and also for Piles.

Black Alder—(*Prinos Verticillatus*).—Known also as Winterberry. It is a small bush or shrub, of an irregular, crooked shape, growing usually five or six feet high, with a bluish-gray colored bark. It has small white flowers, during the month of July, followed with small bright red berries, in the fall and winter, about the size of a pea. It is found growing by the sides of marshy streams, ponds, in swamps and marshy woods, throughout our country. The bark, both of the stalk and root, is the part used as medicine.

Medical Properties and Uses.—It is alterative, and somewhat astringent and tonic, and, by some Botanic physicians, has been highly recommended in Liver Complaint, Jaundice, Diarrhea, Intermittent Fevers, and Debilitated State of the System. Combined with an equal quantity of Golden Seal, in the form of an infusion or tea, taken cold, it has been found very good in Dyspepsia. About ½ ounce of each should be steeped in 1 pint of Boiling Water, and a small wine-glassful drank two or three times a day. A strong decoction of the Black Alder Bark is an excellent application to foul and gangrenous Ulcers, and, when thickened with a little powdered Elm Bark, is a good poultice in such cases. Being a good alterative, that is, to purify the blood and cleanse the system, it is often combined with other articles, as Sarsaparilla, Burdock and Sassafras, to form an Alterative Syrup. The dose of the decoction of Black Alder is about a wine-glassful three or four times a day; of the powdered bark, in substance, from a half to a tea-spoonful.

Black Cohosh—(*Macrotrys Racemosa*).—Commonly known as Blacksnake Root, Squaw Root, Rattle Weed, and Black Cohosh. It rises from three to six feet high, with white flowers, succeeded by shells which contain the seed. The root is black outwardly, irregularly shaped, with many prongs and fibers. Used by all the Indians as an important medicine. Blossoms in June and July. Seeds ripe in August. The whole plant is possessed of medicinal properties, but the root is only used. It grows all over the United States, in open woods, rich grounds, and on the sides of hills.

Medical Properties and Uses.—It makes a good poultice for every kind of Inflammation. A syrup made of it is good for Coughs; so also is a tincture, which is made by adding 1 ounce of the Root pulverized to 1 pint of Spirits, which may be given for Rheumatism, Coughs, Consumption, Inflammation of the Lungs, Hooping-cough, etc., in doses from one to two tea-spoonfuls three to six times a day. For children in less quantities. It is good in most Female Complaints; hence the Indian name of Squaw Root. The tincture of this article, combined in equal parts with Tinctures of Blood Root and Lobelia, and Syrup of Squills, constitutes one of the best Cough Medicines I have ever used: to be taken in tea-spoonful doses, according to symptoms.

Macrotin.—This is the concentrated, active principle, and is made from the root of this article. It is to be found at present in nearly all the drug stores. Dose of the Macrotin: from a half to one grain, two or three times a day, for an adult.

Black Haw — (*Viburnum Prunifolium*).— A small and bushy tree, growing usually from fifteen to twenty-five feet high; common in most of the States. It bears the fruit known as Black Haws, being in the form of berries, hanging in bunches upon the limbs, and are of a jet black color when ripe. The fruit is pleasant and agreeable to the taste, and generally liked. In eating it the seeds should be rejected, on account of their powerful tendency to constipate or bind up the bowels. The article is too well known to need any further description.

Medical Properties and Uses.—The bark of the root is the part to be used as medicine. It is tonic, astringent, alterative, and diuretic, and is most properly used, perhaps, in the form of decoction or strong tea. As a Tonic Astringent, it is valuable in Chronic Diarrhea and Dysentery. Its most valuable application, however, is in case of threatened Abortion, especially for women who are subject to Miscarriage. It seems to act as a special tonic upon the Uterus or Womb. In cases of threatened Abortion, or where this danger is apprehended, a decoction of the bark of the root should be used in doses of one or two table-spoonfuls (owing to its strength), two or three times a day. Some women are subject to Miscarriage or Abortion at certain stages of Gestation, generally about the third or fourth month. Where this is the case, the use of this remedy should commence two or three weeks previous to the expected time, and should be continued for several weeks beyond, or throughout the whole period of Pregnancy. The decoction is also good to relieve After-pains during Confinement; also said to be good to relieve Palpitation of the Heart. Dose: of the decoction, about two table-spoonfuls three times a day; of the tincture, one to two tea-spoonfuls, and of

the powder, from twenty to thirty grains, or half a tea-spoonful. It is best used in a decoction or infusion.

Black Locust — (*Robinia Pseudo-Acacia*).—This tree is very well known through the Western and Southern States, being cultivated as a thrifty and beautiful shade-tree, and for the durability of its timber.

Medical Properties and Uses.—It is emetic and cathartic, and the bark of the root in small doses is tonic. The leaves may be used as a very good substitute for a better emetic. A small bunch of the leaves, say ½ ounce, steeped a few minutes in ½ pint of Boiling Water, and given in doses of half a teacupful about every ten or fifteen minutes, will operate as a very safe and efficient emetic, and as a very good substitute for Lobelia or Ipecac. The bark of the root is generally used as a Cathartic. ½ ounce made into a decoction by boiling in 1 pint of water, down to ⅓ pint, and given in doses of one or two table-spoonfuls night and morning, operates as an effectual Cathartic, very similar to the White Walnut, or Butternut. A strong tincture of the leaves is a very good emetic, given in repeated doses of a table-spoonful, every five or ten minutes, till thorough vomiting takes place. Of course, in giving an emetic of any kind, the patient should at the same time drink freely of some Warm Tea, as Pennyroyal, Boneset, Sage, or Composition.

Black Pepper — (*Piper Nigrum*).—Black Pepper is the product of a vine or creeping plant, which grows in the East Indies, and is cultivated in Sumatra, Java, Borneo, the Philippines, and other neighboring islands. The supplies for the United States are chiefly derived from Sumatra. This article is so common on our tables that a further description is unnecessary.

Medical Properties and Uses.—Black Pepper is stimulant, tonic, and astringent. It yields its virtues partially to Water, and entirely to Alcohol, or Spirits, and may be used as a substitute for Cayenne, when that article can not be obtained. In Flatulence, Indigestion, Nausea, or Sickness of the Stomach, and Want of Appetite, it may be usefully employed. It has also been used with success in curing the Ague. The infusion, made by steeping 1 tea-spoonful of the powder in 1 teacupful of Hot Water, may be given with great advantage in the exhausting Diarrhea which sometimes accompanies Scarlet and Typhus Fevers. The dose may be repeated at the expiration of two hours, if necessary. I have known this medicine to arrest the discharges, in critical cases, when all other treatment seemed to be of no avail. The ordinary dose of Black Pepper is a tea-spoonful, steeped in Hot Water, as already mentioned. It is sometimes steeped in Boiling Milk, and in that form is not unpleasant to the

taste. "1 table-spoonful of ground Black Pepper, as much common Table Salt, about 4 table-spoonfuls of good Cider Vinegar, put into an ordinary sized glass tumbler, and then filled up with Hot Water, constitutes one of the best Cholera remedies known, or ever used. The whole of it to be taken during five or ten minutes, in sups, or table-spoonful doses, and if vomited up, to be repeated, and continued till symptoms abate. No one need have any fear of the Cholera with plenty of this remedy."— *Dr. Jordan.*

Black Root—(*Leptandra Virginica*).—Called also Culver's Physic, Brinton Root, Bowman Root, and Speedwell. This is a plant—which grows plentifully all over the prairies and barrens of the West, mostly on level and somewhat moist lands—rising about two to four feet high, with a straight, smooth stalk, with four to seven leaves coming out opposite each other at different points along up the stalk, from near the ground to the top, and when in bloom, having a number of long white spikes, or tassels, on the top, somewhat like corn-tassels. It may be easily known from this fact, together with the peculiarity of the leaves. The root is the part used as medicine.

Medical Properties and Uses.—It is a good cathartic or purgative, and hepatic, to act on the liver. It is also tonic, and therefore a good Purgative in Intermittent Fevers. It is good in Dyspepsia, in small doses, as a Laxative and Tonic, especially if the liver is torpid or inactive. In Diarrhea and Dysentery, especially the latter, it is one of the best Cathartics known, if given in moderate and repeated doses. It should, in such cases, be combined with a little Rhubarb, and generally a little Opium. The dried root is preferable to the green, and should be finely powdered, if used in substance, or bruised, if in decoction; the green or fresh root being rather drastic, if taken in full doses. Dose: of the powder, from thirty to sixty grains, as a cathartic; of the extract, in the form of pills, from two to four grains. It may be given in decoction, in doses of from one to three or four table-spoonfuls, according to its strength, and repeated every three hours till it operates.

Leptandrin is made from this root—being a precipitated alcoholic extract or resin, in the form of a dark brown or black powder. It is one of the leading Eclectic concentrated remedies, and is a most valuable medicine. It may be used in all cases instead of the root, and in most cases—perhaps all—is preferable. It is regarded by those who have tested it fully as a complete substitute for the Blue Mass, in all cases of Liver Complaints, without any of the bad effects of the latter article. In Diseases of the Bowels, especially in Dysentery and the Bloody Flux, I regard it as very nearly a specific. For this purpose I usually give it in pills, say, for a grown person, about 3 grains

of Leptandrin and ¼ grain of Sulphate of Morphine, to a pill; give one pill at a dose, and repeat in six to twelve hours; generally two or three pills will cure any case of Dysentery. For children, from a fourth to a grain, according to age, and for infants, omit the Morphine, and give instead a few drops of Laudanum, along with the Leptandrin. Dose: as a cathartic, three to five grains; as an alterative for the Liver Complaint, one grain once a day. Found at all the drug stores.

Black Walnut — (*Juglans Nigra*).— This is a very common and valuable tree, found throughout the Middle and Western States, and is too well known to need any description.

Medical Properties and Uses.—The medical properties of this tree are not very generally known; but by those who have tested them, they are very highly prized in certain cases. The green leaves, and also the green fruit, or nut, are the parts used. An infusion or strong syrup of the green leaves is highly recommended as an important remedy in all cases of Scrofula, and this seems to be the principal disease in which they have, as yet, been used. Dr. Negrier, a distinguished French physician, after thoroughly testing the use of the Walnut Leaves for ten years, speaks of their use, in the highest terms, in the treatment of Scrofula. An infusion of the green leaves is to be made by infusing a moderate sized handful, bruised, in 1 pint of Boiling Water, allowing them to steep or simmer awhile, then strain and sweeten with White Sugar, or make into a syrup. A grown person should take about one-third of this quantity during each day. It forms a pleasant Aromatic Bitter, and is said never to cause any unpleasant symptoms. The salutary effects of this medicine do not appear on a sudden; no visible effect may be noticed for twenty days; but perseverance in it, says Dr. Negrier, will certainly effect a cure. It augments the activity of the circulation and digestion, and imparts much energy to the functions. It is supposed to act upon the lymphatic system, as under its influence the muscles become firm and the skin acquires a ruddier hue. Dry leaves may be used throughout the winter, but a syrup made of the green leaves is more aromatic. A salve made of a strong Extract of the Leaves, mixed with some clean Lard and a few drops of the Oil of Bergamot, is most excellent for old Sores. A strong decoction of the leaves is excellent for washing them. As Walnut Leaves are plenty and cheap enough in America, and as the use of them is, in no way, dangerous or unpleasant, and as Scrofulous cases are not uncommon, a trial of this simple medicine should be made. In directing attention to it, good results may be expected. It is our opinion that every country has, within its own borders, those medicines best suited to the wants of its

inhabitants; to discover where and what those medicines are, should engage the attention of our physicians. A saturated, or strong Tincture of the Green Walnuts, is highly recommended by some physicians in the treatment of Cramp or Bilious Colic. The tincture is to be made by slicing the Walnuts when green, or before they become much hardened, and adding enough Whisky or Dilute Alcohol to barely cover them in the vessel, and let stand to digest a week or two (though in cases of immediate need a decoction should be used), and then be taken in doses of a tea-spoonful or two, every half-hour, till relief is obtained. This tincture is also an excellent remedy as an application for Ringworm and Tetter — being in most cases a certain cure, if persevered in.

Black Willow — (*Salix Nigra*). — Called also Pussey Willow. This is one of the many species of the Willow, and grows from twelve to twenty-five feet in hight, having a dark, rough, outside bark, and is found growing along the banks of rivers and smaller streams. It is most usually to be met with in the Middle States. The branches, or small limbs, are of a light yellow color, and are extensively used for making baskets and such like articles.

Medical Properties and Uses. — The Black Willow is an excellent tonic, as well as a powerful anti-septic. Both the bark and the buds are used. The bark, in powder, or bruised, makes an excellent poultice for foul and indolent Ulcers, and in all cases of Gangrene or Mortification. A decoction, either of the bark or buds, is also good to wash old and gangrenous Ulcers, and is also good in such cases taken internally; it may be drank freely. The bark, either in decoction, extract, or in bitters, is an excellent remedy for Ague and Intermittent Fever, instead of Quinine. There are several species of Willow, all of which are more or less tonic.

Salicine. — An article somewhat resembling Quinine, both in its properties and appearance, is made from the bark of this and other species of the Willow. Salicine, in many cases, is a good substitute for Quinine, especially in Intermittent Fevers. It should be given in about five-grain doses three or four times a day; from eighteen to thirty grains being generally sufficient to break up a case of Fever and Ague.

Blackberry — (*Rubus Villosus*). — Known everywhere as the common Blackberry, a briery shrub, growing plentifully from the Eastern to the Western and Southern States, in neglected fields, pastures, about fences, and on the borders of woods, and is not unfrequently troublesome to the farmer by spreading in his lands. It is a valuable medicine and a pleasant fruit. The root is often employed, on account of its properties as a very powerful astringent. The berries also are

used as a medicine. I have tried its operations sufficiently to become satisfied that it is a valuable article in Diseases of the Bowels. Prof. Chapman, of Philadelphia, speaks of it in the highest terms. He says: "In the declining stages of Dysentery, after the symptoms of active inflammation are removed, it is well suited. I have given it with great benefit in Bowel Complaints of children, called Cholera Infantum, to check the frequent purging which usually attends this disease." Being a powerful astringent, it is very useful in all excessive purgings, and especially in the Diarrhea of old people, as well as when it occurs at the close of other diseases. From my earliest practice in Virginia, Tennessee, and Kentucky, I have used this favorite remedy in Bowel Affections with great success. Given in the form of decoction, or boiled, it proves acceptable to the stomach, and not offensive to the taste. It can be used with benefit in Bowel Affections, by grown persons or children, where astringents are required. May be used freely.

Blackberry Syrup. — The following is a valuable recipe for a syrup which may be made from the roots of the Blackberry, with a few other articles mixed with it; and if properly prepared, proves one of the most valuable remedies that can be found in Diseases of the Bowels; indeed, I believe it superior to most of the remedies usually prescribed in this complaint: Take of Blackberry Root, 8 ounces, finely cut up and bruised; Bayberry Bark, 4 ounces; Crane's Bill, 2 ounces; Gum Myrrh, 1 ounce; Cinnamon Bark, 2 ounces; Fennel Seed, ½ ounce, and Cloves, 1 ounce. The whole should be well bruised and put into six quarts of Water, and let steep six or eight hours, simmering slowly till reduced about one-half; then strain, and simmer down to two pints; add, while hot, 1 pound of Loaf or White Sugar; when cold, add 1 pint of best French Brandy, and it is ready for use. A table-spoonful is a proper dose for a grown person, repeated every one, two, or three hours, or every half-hour, according to circumstances, or as the urgency of the case may require, in all cases of Diarrhea, Cholera, and Cholera Morbus; for children, from one to two tea-spoonfuls according to age.

Blackberry Cordial. — An excellent cordial, and useful for the same purposes, especially for children, may be made of the ripe Blackberries. Take, say 1 quart, of the Berries, mash; add 1 ounce of crushed Cinnamon Bark; ½ ounce, each, of Allspice and Cloves, crushed, and 1 pint of Water; simmer slowly for an hour or two, then strain; add ½ pound of Loaf Sugar; simmer till there is but about 1 pint, and ¼ pint good French Brandy. Dose: for children, one to two tea-spoonfuls, repeated often in Diarrheas and Summer Complaints.

Blacksnake Root — (*Sanicula Marilandica*). — Called also Sanicle. This herb grows all over the United States and the Canadas, rising from one to three feet high, and is found in thickets and low woods. The root is the part used, and is hard or fibrous, possessing quite an aromatic smell and taste. It has small white flowers, which appear in June.

Medical Properties and Uses. — This article is regarded as an excellent Nervine — that is, it quiets, as well as strengthens the nerves. It is also tonic, astringent, and somewhat anodyne, being very similar to the Valerian Root, and also the Lady Slipper Root. It is a good remedy in Chorea, or St. Vitus' Dance; and is also considered good in Intermittent Fevers, in the form of decoction, as well as in Croup, Sore Throat, and Hives. It is good in all Nervous Diseases, and has been used with advantage in Hemorrhages from the Womb, in Leucorrhea, or Whites, and in Dysentery. The dose of the powdered root is from twenty grains to a dram, or tea-spoonful, three times a day, according to age; but it is most used in decoction, from a half pint to a pint or more of which may be taken warm or cold, during a day. It is by some considered a sure cure for Snakebites, in which case a strong decoction is to be drank freely, and the same to be applied freely to the bite.

Blessed Thistle — (*Centaurea Benedicta*). — Known also as Holy Thistle, and is often cultivated in gardens, in this country and in Europe, as an ornamental plant. It is a native of Southern Europe, flowers in June, and should be gathered when in bloom, and dried for use, as its medical virtues are then the best. The leaves is the part used.

Medical Properties and Uses. — It is tonic, diaphoretic, and in large doses of the warm infusion, is emetic. It is used mostly in infusion, cold, as a tonic, to strengthen the digestive organs, in Dyspepsia and Loss of Appetite; and also in Intermittent Fevers, the same as a cold infusion of Boneset Leaves. It makes a pleasant bitter, in such cases, and may be used alone, or in combination with other bitter tonics. Dose of the infusion: from a fourth to half a teacupful, several times a day. The infusion may be made with 1 ounce of the leaves to 1 pint of Boiling Water, and let stand till cold.

Blood Root — (*Sanguinaria Canadensis*). — Known generally as Red Puccoon. This article is too common to need any particular description. It is found in nearly all the States, growing in rich, loose soil, in woods, groves, and along rich hill-sides and shaded banks. It appears very early in spring, growing but a few inches high, with smooth stem, several coming up together, and a large, smooth leaf. There is but one flower to each stem or leaf, which is small, white,

without smell, and of but short duration. The root, which is the part used as medicine, is usually about as thick as the little finger of a man, bulbous, uneven, and generally two or three inches in length; is of a bright reddish-orange color, and full of a juice of the same color — hence the common name of Blood Root. The roots should be gathered early in the spring, carefully washed and dried, as the top soon dies and disappears. The best time to dig it is as soon as the stalk or flower appears above ground.

Medical Properties and Uses. — Blood Root is expectorant, alterative, tonic, and emmenagogue; somewhat sedative, narcotic, antiseptic, and sudorific, and in large doses, is an active emetic. It is a powerful medicine, and valuable in many cases. In small doses it excites the digestive organs, and stimulates the liver to a healthy action; in large doses it depresses the pulse, lessens the action of the heart, and produces nausea and vomiting. It should never be given in very large doses. Its principal use should be in Pulmonary and Hepatic Affections — that is, in Diseases of the Lungs, as Consumption, Pneumonia or Lung Fever, Croup, Hooping-cough, Bronchitis, Coughs, Colds on the Chest, and in Affections of the Liver. It is very good combined with other agents, as the Mandrake and Dandelion, in torpid conditions of the Liver; and in Jaundice, is an excellent remedy. As an Alterative, it is a highly valuable agent in Scrofula, Constitutional Diseases, and all cases of impure condition of the blood, where a general purifying alterative or detergent medicine is wanted. A little of the finely powdered root, mixed with as much powdered Bayberry, is an excellent Snuff for Headaches, and Cold in the Head; and alone, it is a good remedy for Polypus of the Nose, to be snuffed frequently. It is also good, applied in the form of fine powder, for any Fungous Growths, and old and indolent Ulcers — acting as an escharotic, and in case of old Ulcers, destroying the proud flesh, and exciting them to a healthy action. A strong tincture of the root, made in Vinegar, is often sufficient to cure Ringworm, Tetter, Salt Rheum, and the like, by being freely applied to the parts. For such purposes, the tincture is best made of the fresh roots, first mashing them; and should be made as strong as possible. By adding to ½ ounce of this tincture (which is called *Acetic Tincture of Sanguinaria*) as much, each, of Tincture Lobelia, Tincture Stramonium Seeds (Jimson Weed), and Oil Cedar, you will have an infallible application for Tetter and Ringworm. A favorite Cough remedy with me, one I have ever found serviceable, is equal parts Acetic Tincture Blood Root, Tincture Lobelia, Tincture Black Cohosh, and Syrup Squills. Dose: a tea-spoonful occasionally or frequently, according to symptoms. In some cases of much pain and soreness, an equal proportion of Laudanum

may be added — that is, if you have taken 1 ounce of each of the other articles, add 1 ounce of the Laudanum. Always shake well before using it. It is always good in Incipient Consumption, Lung Fever, and all Affections of the Lungs and Throat. The Blood Root may be used in powder, tincture, pills, or extract. The powder, combined with as much Ipecac and powdered Lobelia Seeds, forms about the best emetic that can be used; a table-spoonful of the compound, steeped in a teacupful of Boiling Water, to be taken in two or three doses, in the course of ten or fifteen minutes, the patient drinking freely of Pennyroyal or Composition Tea at the same time. Dose: of the powdered Blood Root, from one to three grains, as an alterative or Liver stimulant, once or twice a day; of the tincture, from twenty drops to a tea-spoonful; of the alcoholic extract, from half a grain to a grain. It is best always to use it, in whatever form, in combination with other articles; and it is often so used in the form of pills.

Sanguinarin is a concentrated preparation made from this article; but I have not discovered that it is in any case preferable to the root in substance, or the tincture — the substance being used in so small doses, that there is but little occasion to require it in more concentrated forms. The Sanguinarin is a dark red powder, and may be had at most of the drug stores, put up in ounce bottles. Dose: from a half to a grain, once or twice a day.

Blue Cohosh — (*Caulophyllum Thalictroides*), *Blueberry*, *Pappoose Root*.—This plant grows generally from two to three feet high—divides near the top into two or three branches, with generally three leaves on each branch, and in the center of the branches comes up a short stem, bearing the flowers, which are followed by a cluster or bunch of blue-black berries, about the size of the Huckleberry, or a large Pea, inside of which is a hard stone or seed. Grows generally in open woods, on rich soil, and is to be found in many places throughout the Western States. The roots (which is the part used) are of a light-brown color, yellowish inside, rather hard, small, bunchy, and fibrous. The stalk of the plant is straight, smooth, and upright.

Medical Properties and Uses.— This is an Indian remedy, and considered by them as one of great value, principally used by the squaws to facilitate Childbirth; hence the name of Pappoose Root. It is said that they drink a tea of this root for two or three weeks before the expected time of Labor, or Confinement, and that, owing to this, the Confinement of the Indian woman is a matter of but short duration and small concern. It has been abundantly proved as a valuable article in this respect by our white women. It is also considered by many as one of the most valuable anti-spasmodics, that is to relieve Cramps, Spasms, Convulsions, and Nervous Derangements—

especially in females, during Confinement, in Hysteria, and all cases connected with the Uterus or Womb — that is known. It is recommended also in Colic — especially Cramp Colic — in Fits, in Cholera Morbus (especially if there be cramps), in profuse and painful Menstruation, Inflammation of the Womb, in Suppressed Menses, and in Worm complaints of children. It is diuretic, emmenagogue, and anti-spasmodic, and may be used with safety in almost any moderate quantity. It is used mostly in the form of a strong infusion or tea, in the proportion of 1 ounce of the root, powdered or bruised, to 1 pint of Boiling Water. Dose: from a half to a teacupful, several times during the day. It can always be found at Botanic drug stores, and often at others — either crude or in powder. A little of this, with as much Golden Seal Root, made into a decoction, sweetened with Honey, is an excellent wash for Ulcerated Sore Mouth and Throat. A tincture may be made by adding 2 ounces powdered root to 1 pint of Alcohol, and let stand two weeks — though it is not much used in this form. Dose: of the tincture, one to two tea-spoonfuls. There is, perhaps, nothing that a woman can take during the labors of Childbirth, as a safe and efficient Parturient, with greater safety, than a tea of this root, which may be drank freely.

Caulophyllin.—This is the active, resinous principle, obtained from the root of the Blue Cohosh, and, like the Macrotin, may be found in most of the drug stores, in the form of a light grayish-yellow powder, in ounce bottles. Dose: from one to three grains.

Blue Flag — (*Iris Versicolor*). — Known everywhere as the Blue Flag; found growing in swampy ground, wet meadows, and by the edges of creeks and ponds; has beautiful blue and whitish flowers, which appear in June.

Medical Properties and Uses. — The root is the part used. It is a powerful and valuable alterative, and valued as an anti-mercurial and anti-venereal remedy. It is generally used in combination with other alteratives, to form a syrup or tincture. It may also be made into an extract, or used in substance in the form of powder. It is also cathartic and diuretic, and by some regarded as an antidote for Worms. It is good in Dropsy, given in doses of ten grains of the powdered root every two or three hours, till it operates thoroughly on the bowels — to be repeated once or twice a week. Or the saturated tincture may be taken in tea-spoonful doses, in the same way. It is especially good in Dropsy of the Chest. It is also good in Scrofula, Syphilis, in Chronic Rheumatism, Chronic Affections of the Liver, Spleen, and Kidneys, to be given in smaller doses, say five to ten grains, two or three times a day. Like Mercury, it seems to act more specifically on the Glands throughout the system, exciting them to a

healthy and increased action, yet without any of the bad effects of Mercury. Dose: of the powdered root, from five to thirty grains; of the tincture, from ten to sixty drops; of the extract, from one to three or four grains.

IRIDIN is a concentrated article made from this root, in the form of soft extract, and is to be used in doses of half a grain to one or two grains, for similar purposes as the root, tincture, or syrup. A pill composed of this Extract and Leptandrin, with about 2 grains of the latter and one of the former, to the pill, is an excellent article for Liver Affections, giving one pill a day; and two or three pills act as a safe and efficient Cathartic.

Boneset — (*Eupatorium Perfoliatum*).— Called also Thoroughwort, Indian Sage, Crosswort, Feverwort, and, by the Indians, Ague Weed. Boneset grows throughout the Western country, and perhaps throughout the United States, in meadows, swamps, on the banks of small streams, and in low, damp woodlands, and prairies. It grows from two to four feet high, and is easily known by its peculiar leaves, which stand out crosswise, the stalk seeming to run up through them, or to perforate them. When in bloom it has a large bushy top of white blossoms. It is too well known to need a more particular description.

MEDICAL PROPERTIES AND USES.—It is tonic, emetic, sudorific (or sweating), and slightly cathartic, or purgative. Boneset is a valuable plant, and can not be too highly prized as a medicine. It is an excellent remedy in all cases of Intermittent and Bilious Fevers, in Fever and Ague, as well as in Affections of the Liver, Lungs, and in Dyspepsia. On account of its emetic properties, a warm tea of the leaves taken freely just before and at the time of taking an emetic, aids greatly in its operation, rendering the operation more easy as well as more effectual. It is well to use it thus in all cases of Bilious and Miasmatic Fevers and Agues, when you give an emetic or vomit. For Dyspepsia, and as a strengthening and restorative medicine, it should be taken cold, in tea or infusion, three or four times a day, say half a teacupful at a time. The tea, in small doses, repeated often, *warm*, produces free perspiration or sweating; if taken in large quantities and continued long enough, it will produce vomiting. If taken *cold*, it acts as a tonic, giving tone to the digestive organs, and acting as an Anti-fever and Ague remedy; if taken (cold) in large quantities, it acts as a mild purgative, also. It is one of the best remedies that grows in our country in all cases of Fevers, as well as the common Fever and Ague, and if persevered in, will cure almost any case. It is excellent in Typhoid Fevers. Boneset is generally used in infusion or tea, either warm or cold, owing to the effect you wish to produce; but it is also used in the form of an extract, which may be made

either by boiling down a large quantity of the leaves (or leaves and blossoms when fresh), straining, and then evaporating by slow heat, till it becomes a thick, soft extract; or by making a saturated tincture, by bruising the fresh leaves and covering with Alcohol or Whisky, and letting it stand a few days, then slowly evaporate by slow heat awhile, strain, and evaporate again to an extract. The latter plan is probably the best. The extract is useful in making Ague Pills, generally by combining Quinine with it, and any other articles you may think proper, as Cayenne, Ipecac, etc. An excellent Ague pill is made as follows: Quinine, 12 grains; Cayenne, 6 grains; Ipecac, 6 grains; pulverized Opium, 3 grains; make into eighteen or twenty pills, with Extract Boneset, sufficient quantity, and give two or three pills every two hours till all are taken, to a grown person; for children, in less quantities. Both the Leaves and Extract of Boneset can be had at the drug stores.

Borage—(*Borago Officinalis*).—This plant is commonly found growing about rubbish and in waste grounds. Its flowers, which appear from June until September, are of a beautiful blue color; hence, this plant in many gardens is cultivated for ornament, as well as for its popular use as a cooling beverage in Fevers. It appears to have been used very much by the ancients, and its reputed medicinal character seems to have been very great. It is highly recommended in Melancholia, and other Affections of the Nervous System. The flowers made into a tea, lessen inordinate heat, and will be found to be peculiarly grateful and refreshing. The leaves of Borage produce the some effect as the flowers.

Medical Properties and Uses.—It is considered a diaphoretic, or a sweating medicine; tonic, or strengthening; alterative, or purifier of the blood, and refrigerant, or a cooling medicine. This plant is very much used in France. The syrup made of the leaves and flowers is employed as a demulcent and refrigerant, or a softening and cooling medicine, and a gentle diaphoretic, or sweating agent, in Colds, Rheumatism, and Diseases of the Skin. It purifies and cleanses the blood from all humors, is very much used in all Malignant, Putrid, or Spotted Fevers, and is said to be a sure remedy for Poison, Obstructions, Jaundice, and Melancholy. It has, also, been found useful as a gargle for Ulcers and Canker of the Mouth, and to allay Inflammation of the Tonsils and the Throat. As a gargle in such cases, it may be combined with a little Sage, and made into a decoction, or strong tea, and sweetened with Honey. In other cases, it may be used as a tea, either alone, or with other articles. Can generally be had at the drug stores.

Buchu Leaves—(*Diosma Crenata*).—These are the leaves of a small shrub, a native of the southern part of Africa. The leaves are

the part used, and may always be found in drug stores. The natives of South Africa manufacture an article called Buchu Brandy, by distilling the leaves with Wine, which they regard as a great remedy in all cases of Bowel Complaints, and diseases of the Kidneys and Urinary organs. No doubt it is good, for Buchu leaves is one of our best remedies in certain affections of this kind.

Medical Properties and Uses. — Buchu is mainly used for its diuretic properties, that is, for its favorable action on the Urinary organs. It is also somewhat stimulant and tonic, as well as antispasmodic. It is a useful medicine in all cases of Inflammation or Irritation of the Kidneys, Bladder, or Urethra; in the disease known as Gravel, and in cases where there is an excess of what is known as Uric Acid, which forms in the Urinary organs, and often leads to Gravel. It is good where there is a deficiency, also, of the secretion of urine, or any difficulty in passing it. The best way to use this article is in infusion or tea. ½ ounce of the leaves to 1 ounce may be added to 1 pint of Boiling Water, and after steeping a few minutes, may be taken in broken doses, or say half a teacupful at a time, so as to take the pint during the day, and may be repeated for two or three days, if necessary. In tincture, the dose is from one to two tea-spoonfuls, three or four times a day.

Bugle Weed — (*Lycopus Virginicus*). — Called also Sweet Bugle, Water Bugle, Bugle Wort, and Water Hoarhound. This plant grows near water, creeks, swamps, etc. It blooms in July and August, and ripens in September.

Medical Properties and Uses. — When fresh, it has a peculiar balsamic smell, somewhat like turpentine, and a slightly bitter, disagreeable taste. The herb, or leaves and stems, are the parts used. It is astringent, tonic, and somewhat sedative. Used generally in infusion or tea, and is valuable in Bleeding at the Lungs, Hemorrhages from the Stomach or Bowels, and in Diabetes or Excessive Discharge of Urine. Has cured this complaint when other means failed. To be drank freely, cold.

Burdock — (*Arctium Lappa*). — This plant is too well known to need any description, by the burs, or heads, which stick to the clothes. The seeds, which are used as well as the root, become ripe in August and September. It grows two or three feet high, with large leaves, flowers purple, and abounds in great abundance in pastures, old fields, along the sides of roads, around old buildings, and in damp places, and is well known by every body.

Medical Properties and Uses. — The root or seed may be given as a tea. The root is generally used by boiling 2 ounces in 3 pints of Water down to 2 pints; let it cool, and drink in the course of two

days. It will be found beneficial in diseases of the Kidneys or a Stoppage of the Urine. Of this tea you may drink about a pint in twenty-four hours. It is very valuable in Dropsy, Rheumatism, and all Diseases of the Skin, in Sores, in breakings out from the Venereal Disease, or when the blood, from any cause, is impure. Burdock, mixed with Sarsaparilla and Bitter Sweet, in equal quantities, say 2 ounces each, and boiled well together, so as to form a strong decoction, or tea, and taken cold for some time, will act as an alterative, and purify the blood. An excellent alterative syrup may be made of these three articles, in equal parts. The leaves, bruised and applied to the feet and forehead, are useful in Fevers; they may also be taken, green, rolled, and soaked in Vinegar, and applied as warm as can be borne, on any part of the body suffering with pain. The following syrup, made of the root, I have found highly beneficial in the cure of Scrofulous and other hereditary diseases: Take of the dried root, 8 ounces; boil in 4 quarts of Water, down to 1; strain off; add, while warm, 1 pound of Loaf Sugar, and, when cold, 1 pint of good Gin. Dose: from one table-spoonful to a wine-glassful, several times a day. In warm weather, keep it in a cool place. The best way of preserving the root is to slice it across from one-fourth to half an inch thick, and then dry it. The leaves may be dried and kept for use without losing any of their medicinal qualities. I have found this root very valuable in a great many chronic diseases, or diseases of long standing. The root should be dug in the spring before the leaves start, or in the fall after the top is dead, as it then possesses the full strength of the entire plant. The seeds possess about the same properties as the root, and may be used for the same purposes.

Burgundy Pitch.—This is the concrete juice or turpentine, hardened and purified, which runs from the Norway Pine (*Abies Excelsa*), called also Norway Spruce Fir. The tree is a native of Northern Europe and Asia, a species of pine, growing often very large, and to the hight of two hundred feet. Burgundy Pitch, as we find it in the drug stores, is of a dark yellow color, hard and brittle, having rather an agreeable taste, slightly of turpentine, and a strong balsamic odor. A pure article, it is believed, is seldom met with in this country.

Frankincense.—The resinous exudation which runs from this tree, and forms in concrete *tears* or *lumps*, as you often see upon the Wild Cherry-tree and Peach-tree, is the Frankincense of commerce, and the same, no doubt, as that spoken of in the Scriptures, as one of the precious gums. It is mostly valued for its agreeable odor when burned.

Medical Properties and Uses.—Burgundy Pitch is used mostly

as a plaster, or an ingredient in plasters. It makes an excellent strengthening plaster for Weak Backs, and is good for Pains, Rheumatic Swelling of the Joints, Pains in the Chest; and in Hooping-cough, it is very good applied over the breast and stomach of children. To form a plaster, it is to be melted and spread thin on soft thin leather, and as it cools, thin, smooth, and spread it out with the warm blade of a case-knife, or spatula. To derive any decided effect from these plasters, they should be made large, so as to cover the breast, back, stomach, abdomen, side, or whatever part they may be applied to. A small Pitch Plaster is of but little account. They are to be worn for several days at a time — or as long as they will stick.

Butternut — (*Juglans Cinerea*). — Known everywhere as the White Walnut. It is a large tree, growing generally in rich bottoms, along streams, and is too common to need any further description. The inner bark of the tree is the part used, and is an excellent cathartic or purgative, mild, yet efficient, and leaving the bowels in a healthy condition. During the Revolutionary War, it was used extensively by the army physicians as a substitute for other Cathartics. The way to use it is to boil down a lot of the bark, and reduce it to a thick, soft extract, and then make into pills for use, by mixing, if necessary a little of any kind of powder that would be suitable to thicken or harden it sufficiently, as powdered May Apple Root, Bayberry Root, Bitter Root, or even Flour will do. Dose: as a purgative, three or four ordinary sized pills; as a laxative, in Costiveness and Dyspepsia, one or two pills a day. It is one of the safest and best purgative medicines known.

Calamus — (*Acorus*). — Called also Sweet Flag. This article is too well known to need any description. It is generally cultivated, and prefers to grow on the borders of ponds, small streams, in swamps, and where there is a rich muddy soil and plenty of water.

Medical Properties and Uses. — It is a stimulating, aromatic tonic. It is most useful, perhaps, in cases of flatulent Colic, especially for children, and should be used in the form of a tea. A syrup made of Calamus is an excellent substitute for such injurious articles as Bateman's Drops, and Godfrey's Cordial. The root is the part used. It may be made into a powder or an infusion; and in the latter form may be used freely.

Camphor — (*Camphora*). — Camphor is a peculiar gum, or concrete substance obtained from an evergreen tree, called the Laurus Camphora, a native of China, Japan, and the East Indies. The Camphor of this country is mainly brought from the city of Canton, in China, and generally in a crude state, having to be purified before it is fit for use. The Camphor-tree is highly aromatic, all parts of it yielding

Camphor, the grains of the gum being found lodged in all the cracks and vacant places in the tree.

Medical Properties and Uses.—Camphor, in moderate doses, is sedative, anodyne, diaphoretic, and anti-spasmodic. In over doses, it is an irritant narcotic. It is also a stimulant to the Nervous System, and in Wakefulness, Delirium, and those sudden jerkings and startings in low stages of Typhoid Fevers, it is a valuable remedy. Camphor has a strong, invigorating smell, and hot, acrid taste. It is exceedingly volatile, and by exposure to the air soon loses its virtues. The Spirit or Tincture of Camphor is made by adding 1 ounce of the Gum to 1 pint of good Spirits. Camphor is very vivifying. The smell of it will relieve Faintness; and when taken into the stomach, in the dose of eight or ten grains, it restores the powers of life. In Spasms, Convulsions, Hysterics, and Nervous Affections, Camphor is a powerful sedative. In these diseases, it should be given in a dose of ten grains every three or four hours. In small doses, in such cases, it has but little effect. Camphor is given in Typhus Fever, and in all diseases of Debility, to support the powers of life. Taken in the ordinary dose of ten grains, repeated every two or three hours, it will cure the most obstinate Headache. The Tincture of Camphor is an excellent application to rub on the parts affected in Pains and Soreness of the Flesh and Bones. Applied to an inflammation upon the surface of the body, it will resolve it, in many instances, better than any other medicine. It enters into many of the embrocations and liniments for Pains, Rheumatism, and the like, as well as into some valuable compounds for internal use. Spirits of Camphor is an article that should always be kept in the house.

Caraway Seeds—(*Carum Carvi*).—Caraway is a garden plant, common to most of our gardens. The seeds are sold in markets and drug stores, and much used by cooks and confectioners to season or flavor cakes and sweetmeats.

Medical Properties and Uses.—Caraway Seeds are carminative and aromatic, and are excellent for flatulent Colic of children, in the form of an infusion. They are also used to correct or improve the taste of other less agreeable medicines. They also stimulate the Digestive Organs. The Oil of Caraway (*Oleum Carui*) is also used for the same purposes. Dose: of the seeds, in powder, the same as Cardamom Seeds: of the oil, from two to ten drops, according to age, on a little Sugar; or for nursing infants, one drop on a little Breast Milk.

Cardamom Seeds—(*Alpinia Cardamomum*).—Cardamom Seeds are obtained from a plant or shrub, which grows from six to ten feet high, and is a native of Malabar, a country on the west coast of British

India. They possess a fragrant odor, and warm, pungent, aromatic, and pleasant taste. May be found generally in the drug stores.

Medical Properties and Uses. — Cardamom Seeds are aromatic, carminative, and what is called stomachic — that is, they promote the process of Digestion and strengthen the Stomach. They are chiefly used for Flatulency, or Wind Colic, either in infusion, tincture, or in substance. They are also used along with other medicines and compounds, to render them more agreeable to the taste. They are often chewed for their pleasant taste and odor, and to destroy a bad breath. Dose: of the powdered seed, from twenty grains to a dram, and of the tincture, from one to two or three tea-spoonfuls.

Carpenter's Square — (*Scrophularia Marilandica*). — Called also Square-stalk, Heal-all, etc. This is a common weed in most parts of the West, growing from three to five feet high, along roadsides, in old fields, and open woods, etc. It has an erect, square stalk, with joints, and numerous branches coming out at the joints, at near a right angle or square — the leaves proceeding from the angle that is thus formed. The flowers are of a greenish purple. The plant may easily be known by the stalk being *square*.

Medical Properties and Uses. — Both the root and leaves are useful. An infusion or tea of the root is regarded as an excellent remedy for females, in obstructed Menses, and also painful Menstruation. It has also been used with success in restoring the Lochial Discharge, when it has too suddenly ceased — that is, the necessary discharge which follows Childbirth. In all such cases, the infusion is to be drank freely. The root is diuretic, alterative, and anodyne; and considered good in Dropsy, Scrofula or King's Evil, Liver Affections, Skin Diseases, and all derangements of the Glandular system. In Dropsy, it should be used in tea or infusion; as an alterative in Scrofula and other constitutional diseases, in the form of syrup, generally in combination with other alteratives. The leaves, either fresh and bruised, or, if dry, softened with warm water, are good to apply to Wounds, Bruises, and old Sores; and also make an excellent Healing Salve, stewed in Lard or fresh Butter, with a small portion of Beeswax added, for all kinds of Sores.

Carrot — (*Daucus Carota*). — This is the common garden Carrot, cultivated for culinary purposes. It resembles somewhat the garden Parsnep, but is of a deep orange yellow color.

Medical Properties and Uses. — The root and the seeds are the parts used as medical remedies. The fresh root scraped fine, covered with Boiling Water, and thickened with a little Corn-meal, makes an excellent poultice for all painful Tumors, Swellings, and Indolent, Gangrenous Ulcers. The seeds of the Carrot are strongly diuretic,

and are by some highly recommended as a remedy for Dropsy, Gravel, and chronic affections of the Kidneys. To be used freely in the form of tea or infusion — that is, from a half to a teacupful, to be drank three or four times a day. A free use of the infusion is also good to relieve Strangury, or that distressing desire to void the urine, which arises from an over-dose of Cantharides, as well as from other causes; but for internal use, the seeds and root of the Wild Carrot are thought to be preferable.

Carrot, Wild — (*Daucus Carota*). — The Wild Carrot, though thought to be a native of Europe, is to be found growing wild in most parts of the United States. It is very nearly allied to the garden Carrot, if indeed they were not the same originally, the difference having been produced by cultivation. The Wild Carrot grows two or three feet high, generally in old, neglected fields, and along road-sides. The root resembles that of the cultivated species, but is much more slender, and has a sweetish, aromatic taste. The seeds are of a dull brown color, oval shaped, flat on one side and convex on the other, with a sort of bristly hairs on the convex side. They have a warm, pungent, bitterish taste, and aromatic smell.

Medical Properties and Uses. — Both the root and the seeds are used as a valuable diuretic, but the seeds are the best. The seeds are to be used in infusion, and should be bruised and steeped in Boiling Water — but not boiled, as boiling or decocting will destroy their virtues. Dose of the infusion: from a half to a teacupful, three or four times a day, in cases of Gravel, Dropsy, Kidney Affections, Inflammation of the Bladder, Strangury, and the like.

Castor Oil — (*Oleum Ricini*). — This is an oil made from the seeds or beans of a large, rank herb, called the *Ricinus Communis* — known most commonly as the Castor-bean. In this country, it grows from five to eight feet high; while in some countries, as in the East Indies and some parts of Africa, it is said to attain the hight of thirty or forty feet! It is a native of India, but is extensively cultivated in this country. Castor Oil is to be found in all the drug stores, and is too common to need a description.

Medical Properties and Uses. — Castor Oil is a simple, mild, but certain cathartic, and may be given to persons of all ages and conditions. It is a very valuable cathartic, because of the mildness of its action, being suited to infants, delicate females (especially during Pregnancy), and to certain conditions of the patient, where more active or drastic purgatives would be injurious, such as in Piles, Rupture, Inflammation of the Bowels, advanced stages of Dysentery, and the like. Dose: for a grown person, about one ounce, or two to three table-spoonfuls; for an infant, from one to two tea-spoonfuls. 3 parts

Castor Oil and 1 part Oil or Spirits Turpentine, given in table-spoonful doses, every three to six hours, is an excellent remedy in Dysentery, or Bloody Flux.

Catechu—(*Acacia Catechu*).—The article of the drug stores known as Catechu, is a dark or blackish colored gum, or hard extract, quite brittle. This gum is obtained from a small tree (the *Acacia Catechu*) which grows in the East Indies, especially in Hindostan. The extract will dissolve readily in Hot Water, and in Alcohol or Spirits. It may be found in any of the drug stores.

Medical Properties and Uses.—Catechu is a pure and very powerful astringent, and is mostly used on that account. It is a good remedy in Chronic Diarrhea, and copious Watery Discharges from the Bowels. On account of its powerful astringent properties, it is used as a local application, to dry up the Ulcers of Aphthous Sore Mouth, and for contracting the uvula or palate when it becomes elongated, or is "down." For these purposes, it may be applied in strong solution. It is also good to harden the gums, when they become soft or spongy; also good to apply in strong solution or tincture to old, indolent and foul Ulcers. An infusion is also good snuffed up the nose, to stop Bleeding at the Nose. In all cases where a pure and powerful astringent is wanted, Catechu may be relied upon, in almost any form. Dose: of the powder, from ten to thirty grains, or half a tea-spoonful, repeated every hour or two, according to the urgency of the case; of the tincture, from a tea to a table-spoonful, repeated frequently.

Catnip—(*Nepeta Cataria*), or Catmint.—This is an herb too common and well known to need much description. It is a native of Europe, but has become naturalized in this country, and is now to be found growing in almost all parts of the country, about old buildings, fences, in neglected places and in cultivated grounds. It flowers from June till September. The leaves and blossoms are the parts used, having a peculiar and somewhat unpleasant aromatic smell, and slightly bitter taste. It takes its name from the fact that cats are fond of eating it.

Medical Properties and Uses.—Catnip is a diaphoretic, that is, it promotes perspiration; and tonic, if taken cold. It is also slightly diuretic, emmenagogue, and anti-spasmodic. Catnip Tea is good for the flatulent Colic of children; it is also an excellent drink in Fevers, to promote perspiration, and to induce sleep. A warm tea of Catnip and Saffron is excellent in Small-pox, Measles, and Scarlet Fever; and may be used with advantage in all cases of Colds. In Nervous Headache of Females, Hysterics, and Irritability of the Nerves, an infusion of Catnip is often very good. Though a common, and by many considered a very simple, article, Catnip, nevertheless, is a very valuable remedy, and should be used more frequently than it is. In Fevers t

produces perspiration, without stimulating or increasing the heat of the body. It should always be kept on hand where there are children, as a remedy for Colic, as well as in Fevers, and Colds, and may always be taken freely. As a poultice, it is very valuable, applied to Painful Swellings; and as a fomentation, in combination with other bitter herbs, it is often very beneficial, applied as warm as can be borne, in cases of severe Pain and Inflammation.

Cayenne Pepper—(*Capsicum Annuum*).—Cayenne Pepper is said to be a native of South America; it is extensively cultivated in Jamaica, and other West India Islands, and is often to be met with growing in the gardens of this country. It grows usually about eighteen inches high, and the pods or peppers are small and slender, about an inch in length. There is a kind called Bird's-eye, or African Pepper, the pods of which are about the size and shape of a medium-sized red cherry, which is thought to be, if possible, stronger and better than the other species. Either kind, however, is strong enough.

Medical Properties and Uses.—Cayenne is one of the strongest, purest, and best stimulants known; it is also tonic and diaphoretic. It is very important to get the pure article, as there is a vast deal that is adulterated. In the West Indies, particularly at Barbadoes and Jamaica, they use it to help Digestion, in Debility of the Stomach, Colic, Pains of the Womb, obstructed Menstruation, Quinsy, all Diseases of the Throat, and Dropsical affections; made into a plaster with Honey, they apply it for Rheumatism, Pain of the Joints, Gout, Swellings, etc. Outwardly as a liniment, mixed with any kind of oily substance, particularly the oil from tried Bacon, and applied warm or hot as it can be borne, it is a fine remedy in Rheumatism. I have used the Cayenne gargle with great success in Scarlet Fever. Dr. Stephens asserts that he employed it also in about four hundred cases with surprising success. He also says that the ulcers in the back part of the mouth, soon cast off their sloughs, and began to heal; a genial, pleasant warmth was diffused throughout the system, and the vital powers soon assumed a more healthy condition. It was prepared in the following manner: 3 tea-spoonfuls of common Cayenne Pepper, and 2 tea-spoonfuls of fine Salt; mix them together; pour upon them ½ pint of Boiling Water; strain, and add ½ pint of good Vinegar; when cold, give from half to a table-spoonful to a grown person, every half hour, or hour, reducing the dose in proportion to the age, and gargle the throat frequently with it. Every old lady in the country knows, or ought to know, that, in sudden colds, a tea made of Cayenne Pepper is an excellent remedy; or 1 tea-spoonful of Cayenne, mixed with Molasses or Honey, and taken in broken doses, is a valu-

able remedy in Coughs; when mixed with a portion of Slippery Elm, it is still better. A weak tea of it is an excellent wash for Sore or Inflamed Eyes, which should be used two or three times a day. When we wish to produce perspiration or sweating, the warm tea should be given when the patient is in bed, or upon retiring to bed. Parkinson, a distinguished Botanist, speaks in the highest terms of its virtues. I give you his own language, on account of the quaintness of its style, taken from a work published on *Plants*, in the year 1640:

"A scruple (which is twenty grains), of said powder, taken in a little veal or chicken broth, doth wonderfully comfort a Cold Stomach, helping Digestion and provoking an Appetite to Meat. The powder, taken for three days together in a decoction of Pennyroyal, expelleth the Deadbirth. It helpeth an old inveterate Cough, and being mixed with Honey, and applied to the throat troubled with Quinzy, it helpeth it in a short space; made up with a little Pitch or Turpentine, and laid upon any hard Tumors or Kernals, it will disperse them. A decoction of the pods made with Water, and the mouth gargled therewith, easeth the Toothache, and preserveth the Teeth from rottenness; the ashes of them rubbed on the Teeth will make them white."

Capsicum, or Cayenne, is an important remedy in a large variety of diseases and complaints. In Hemorrhages, especially from the Womb, it is often very efficacious, taken in the form of tea, or in powder, on account of its general stimulating properties and tendency to equalize the circulation of the blood throughout the system. In all cases of deficiency of circulation in any part, as in cold extremities, or where there is too great a determination of blood to any part or organ, the free use of Capsicum will be found an admirable remedy. In cases of Hemorrhages after Parturition, or Childbirth, it is an excellent remedy, and may be used either alone, or in combination with other agents, as Beth Root, Star Root, or in the form of the Composition Powders, of which it forms a part. It is an important remedy in the Cholera, combined with other articles; equal parts of Capsicum and common Table Salt, say ½ ounce of each to 1 pint of good Vinegar, given in table-spoonful doses, is an excellent remedy to stop vomiting, in Cholera and Cholera Morbus, and has been, in many instances, found to be an effectual remedy for those diseases. In pills or powders of Quinine, for the Ague and Intermittent Fever, it is well generally to combine equal or double the quantity of Capsicum, on account of its tonic and stimulant properties. The Tincture of Cayenne is an important ingredient in stimulating liniments. It is often well to combine a small portion with other agents, to aid their action, as cathartics, emetics, tonics, and diaphoretics. Capsicum may always be found in the drug stores, in the form of powder. Dose: of

the powder, from one to five or six grains; of the tincture, from half to a tea-spoonful. The tincture is made by adding 2 ounces to 1 pint of Alcohol or Proof Spirits, and allowing it to digest for a week or two.

Celandine — (*Impatiens Pallida*). — More familiarly known as Touch-me-not. This is a tender, succulent plant, growing usually in rich, moist soils, and to the hight of two to four feet, with numerous branches, and joints where the branches come out. The stalk is of a watery, transparent appearance, and quite full of juice. The flowers are hood-shaped, of a light yellow color, with spots of dark orange, followed by a sort of pods, which, if touched or squeezed a little, will burst, fly to pieces, and scatter their seed in every direction. Hence the name of Touch-me-not.

Medical Properties and Uses.— This herb is considered a good remedy in Jaundice, and also a valuable diuretic in cases of Dropsy, to be drank freely in decoction. The juice of the green herb, however, is most commonly used as a remedy for Tetter, Ringworm, to remove Warts, and for cleansing old and foul Ulcers. A decoction of the herb is also said to be good when applied to Ringworm, Salt Rheum, and the like; and also as a poultice, made by boiling in Sweet Milk.

Centaury—(*Sabbatia Angularis*).—This plant grows from one to two feet high, usually in low, moist grounds, meadows, and old fields, and is common in most of the Western and Southern States. It is sometimes called Rose Pink, but is generally known as the American Centaury. The flowers, which appear in July and August, are of a beautiful rose color, an inch or more in diameter, and somewhat in the shape of a pink blossom. Both the leaves and flowers are used.

Medical Properties and Uses. — Tonic and restorative; and is esteemed highly as a bitter, and valuable to strengthen the stomach. 2 ounces of the Leaves and Flowers; 1 ounce of Orange Peel; the whole steeped in 1 quart of Brandy for two weeks, make a valuable Bitter. One table-spoonful of this tincture, taken before breakfast and dinner, creates an appetite. For children having Worms, give one or two tea-spoonfuls or more, which will generally destroy them; or a decoction of the leaves may be made and sweetened, and given warm in one or two table-spoonful doses, according to age, in cases of Worms — repeated for several days. It is also a good restorative, either in bitters or infusion, and considered a preventive of the Fall Fevers, if used as a daily bitters.

Chamomile—(*Anthemis Nobilis*), *Noble Anthemis, Roman Chamomile.* The flowers are the part used for medicine. This plant is a native of Europe, growing wild there, but is extensively cultivated both in

Europe and in this country, in the gardens. Chamomile Flowers are always to be found in the drug stores.

Medical Properties and Uses. — Chamomile Flowers is an excellent bitter tonic; also carminative and anti-spasmodic, and in large doses emetic. A tea, or warm infusion, is, therefore, good to aid the action of emetics. A cold infusion of the Flowers taken in moderate doses (like the cold infusion of the Boneset), two or three times a day, is good in Dyspepsia, and weak, debilitated conditions of the Stomach, and also during recovery from Typhoid and Intermittent Fevers. They are also good as a strengthening remedy in cases of Female Weakness, either in cold infusion, or in the form of Wine Bitters, which may be made by putting ½ ounce of the Flowers into 1 quart of Madeira, Malaga, or Port Wine. Dose: half a wine-glass two or three times a day. Other suitable tonics may be combined, such as Spikenard, Colombo, and Gentian Roots, in about equal parts; the whole should be covered with near a pint of Boiling Water; when cold, put all into a bottle, and add a quart of Wine. This is an excellent Restorative Bitter. The Oil of Chamomile, which can generally be had at the drug stores, is considered a good remedy in Colic, Cramp in the Stomach, Hysteria, and Dysmenorrhea. Dose of the Oil: from five to fifteen or twenty drops, on a little Sugar.

Charcoal — (*Carbo Ligni*). — Carbo Ligni, or Wood Charcoal, is a valuable medicine in certain cases. The Charcoal of sound, hard wood, such as Hickory, Ash, or Sugar-tree, should always be preferred for medicinal purposes. It can generally be found in the drug stores, already powdered.

Medical Properties and Uses. — A most powerful anti-septic and absorbent, and highly valuable in Dyspepsia and Sour Stomach, and especially where there is Fetid or Bad Breath. It is also extremely valuable in Chronic or Putrid Dysentery, and all cases of a tendency to Mortification of the Bowels. Dose: in powder, from one to two or three tea-spoonfuls, in a little water, repeated according to the urgency of the case. In Acidity of the Stomach, Sour Belchings, Constipation of the Bowels, and in nausea and vomiting attending Pregnancy, from a half to a tea-spoonful, once or twice a day, will be found highly beneficial. It is also good externally, applied to foul and gangrenous Ulcers, either by sprinkling it on, or combining it in poultices. Charcoal is also a good Tooth Powder, and may be used either alone, or in combination with equal parts of powdered Cinchona, Golden Seal, and Orris Root; and by mixing this compound with a little Honey, you will have an excellent Tooth Paste, equal to the best. A little of this, applied once a day with the brush, will keep the teeth white and the gums in a healthy condition.

Checkerberry — (*Mitchella Repens*). — Called also Partridge Berry, Winter Clover, and Squaw Vine. It is a little evergreen vine, lying close upon the ground, and generally grows in mats or beds. It is found mostly growing in shady woods, and in all kinds of soils. The leaves are small, opposite each other, and round, resembling Clover; flowers white, sometimes tinged with red, followed by small, bright red berries, dry, and full of hard seeds. Both the berries and leaves remain through the winter.

Medical Properties and Uses. — The whole plant is medicinal, but principally the vine only is used. It is diuretic, astringent, and parturient. A decoction of it used freely, it is said, will cure the Dropsy. It is also highly valued by some as a remedy for Diarrhea, Dysentery, and the Suppression or Retention of Urine. A tea or decoction of the berries is also said to be a sovereign cure for Diarrhea. In females it seems to have a peculiar and special action on the Uterus, and is highly recommended in the various affections of that organ. Among some tribes of Indians, it seems to be regarded as a most valuable Parturient. Dr. Smith, in his *Botanical Physician*, says: "This is an invaluable plant for child-bearing women. I first obtained the knowledge of its use from a tribe of Indians in the western part of New York. The squaws drank it in decoction for two or three weeks previous to and during delivery, and it was the use of it that rendered that generally dreaded event so remarkably safe and easy with them."

Cinnamon — (*Laurus Cinnamomum*). — Cinnamon Bark is found in all the drug stores, and in country stores and groceries. It is the bark from a tree called the *Laurus Cinnamomum*, of about twenty to thirty feet in hight, which grows in some parts of India, and in the islands of Ceylon, Borneo, etc. The bark is stripped from the small limbs and shoots, carefully scraped and dried for exportation. The best Cinnamon comes from Ceylon; though probably the most that is to be met with in this country is from some parts of China, and is generally inferior in flavor and strength to that from Ceylon.

Medical Properties and Uses. — Cinnamon is stimulant, carminative, and astringent. It is an important astringent in Dysentery, Diarrhea, Summer Complaint, or Cholera Infantum, either alone or in combination with other articles, as Cloves, Allspice, White Oak Bark, and Blackberry Root, in the form of decoction or syrup. A tea of Cinnamon is good for ordinary Colic, Cramp or Pain in the Stomach, and to check Vomiting and allay Nausea or Sickness at the Stomach. A strong infusion, or the tincture, is often serviceable, given in moderate doses, repeated every ten or fifteen minutes, in checking Hemorrhage from the Uterus, and in severe and painful

Menstruation. Dose: of the powder, from ten to thirty grains; of the tincture, from a half to a tea-spoonful; of the decoction, from one to two or three table-spoonfuls.

Cleavers—(*Galium Aparine*).—This is a fine, tender, weak, succulent plant, common in most parts of this country, but is difficult to describe so as to enable one to recognize it from the description alone. It is probably more generally known by the name of Goosegrass. It is also called Catch Weed and Bed Straw. It has a long, slender, crooked stem, usually about half the size of a wheat straw, and grows to the length of two to four or five feet, full of branches, and fine, slender leaves. It grows in rich, moist places, in thickets, along fences, often climbing or hanging on whatever is near it. It has but very little root, consisting of a few hair-like fibers, of a dark reddish color. The leaves and stem are of a light green color, and feel rough and hairy to the touch. It has small white flowers, which appear from June till September. There are several varieties of this plant; of some the leaves are very slender and fine; while of others they are coarse, much larger, and of a darker green color. They all possess about the same virtues, however.

Medical Properties and Uses.—Cleavers is regarded as a most valuable cooling diuretic, useful in most diseases of the Urinary Organs. In Suppression or Retention of Urine, it is a most admirable remedy: also in Inflammation of the Kidneys, Inflammation of the Bladder, Scalding of Urine, as in Gonorrhea, it is one of our best remedies. It is also said to be a solvent of Stone in the Bladder, and a most admirable remedy in all cases of Gravel. The whole herb is used. It yields its virtues readily to warm or cold water, and is always to be used in infusion, and may be drank freely. Cleavers must never be boiled or scalded, as that will destroy its properties. 1 ounce of the dry herb may be infused for two hours in 1 pint of Warm Water, and from ½ to 1 pint drank cold during the day: to be taken more or less frequent, according to symptoms. An infusion of equal parts of Cleavers and Elder Blossoms, is a good drink in Scarlet Fever, Small-pox, and all Eruptive Diseases. A cold infusion of the Cleavers, drank three times a day, and the parts washed with the same, will remove Freckles from the Skin, if continued for two or three months.

Cloves—(*Caryophyllus*).—Cloves are the dried buds or unexpanded flowers of a beautiful evergreen tree, called the *Eugenia Caryophyllata*, which grows in the East Indies, and other tropical climates, rising to the hight of fifteen or twenty feet. The flower-buds are collected during the fall months, before they expand, and carefully dried in the shade. Cloves yield a highly aromatic essential oil, and contain also

Tannin, and a resinous gum, which renders them a useful and agreeable astringent.

Medical Properties and Uses. — Cloves are a stimulant and aromatic astringent, and useful to allay Nausea and Vomiting, to relieve Flatulent Colic, to improve Digestion, as a healthy stomachic, and as an astringent; are also valuable as an ingredient in compounds for the cure of Diarrhea and Dysentery. A little powdered Cloves, or of the Oil, is often combined with other medicines to prevent them from griping, or producing sickness at the stomach. Dose: of the powder, from ten to twenty grains; of the oil, from one to five drops.

Cobweb—(*Tela Araneæ*).—This is simply Spider's Web; or, rather, the web of the Black Spider, usually found in cellars, and other dark places.

Medical Properties and Uses. — It is said to be febrifuge, that is, will allay Fever; also sedative and anti-spasmodic. It is spoken of by some as possessing most wonderful virtues, in allaying morbid irritability, and calming the excitement both of body and mind. I have found it to produce, in many instances, the most delightful state of mental and bodily tranquillity. It is given in doses of three to five grains, in the form of pills, and in case of Ague, or Chills, one pill should be given every hour during the day. It is said to have cured the most inveterate cases of Fever and Ague, where every thing else has failed. It is also recommended in Wakefulness, Asthma, Hysteria, Spasms, and Nervous Excitement.

Colchicum — (*Colchicum Autumnale*).—This is an annual plant, known most commonly by the name of Meadow Saffron, being found in meadows, and low, rich lands. It is indigenous to Europe, and grows plentifully throughout England. It has a bulbous root, and both the root and seeds are used for medicine. Alcohol, Wine, and Vinegar extract its virtues; and it is most generally used in the form of what is called Wine of Colchicum, or in the Acetic or Vinegar Tincture.

Medical Properties and Uses.—Colchicum is a sedative cathartic, and also diuretic and emetic. It should never be used in large doses, as it acts, in such cases, as an acrid narcotic poison. It is seldom used for its cathartic effects, and never should be, but mainly in small doses for its diuretic and alterative effects, in cases of Rheumatism, Gout, Dropsy, and Palpitation of the Heart. The Wine of Colchicum is mostly used, and can generally be had at the drug stores. The dose is from twenty to sixty drops, two to three times a day, and to be continued for several days. You should commence with twenty drops, and increase three or four drops each day, till you reach sixty, or a moderate sized tea-spoonful. The Vinegar Tincture is made by add

ing 1 ounce of the bruised root (or seeds) to 1 pint of good Vinegar, and let stand for two weeks. Dose: the same as the Wine Tincture. Useful in Chronic Rheumatism, Gout and Dropsy. The dose of the powdered root is one grain, increased gradually up to six or eight grains, three times a day.

Collodion. — This is a thick solution of what is called Gun-cotton (Pyroxyline), made by dissolving it in Ether. It is only used for surgical purposes, that is, for applying to small Wounds, Injuries, and Abrasions of the Skin, Burns, and the like, where it becomes necessary to shield the exposed flesh. It is sometimes called Liquid Cuticle, because, when applied to any part of the surface of the body, as where a bit of skin has been knocked off the back of the hand, fingers, or in case of a Burn, the Ether almost immediately evaporates, leaving a solid, flexible, transparent crust, or artificial skin adhering, impervious to air and water, and which will, if the article is good, remain for several days. If the first coating is not thick enough, additional layers can be applied as soon as the previous one has become dry. As fast as one has become broken or worn off, renewed applications should be made, and in this way the injured part may be protected till healed up, and a new skin is formed. It is a very convenient and serviceable article for purposes of this kind. May always be had at the drug stores, put up in small bottles ready for use.

Colocynth. — This is the fruit of the *Cucumis Colocynthis* — a sort of trailing vine, somewhat resembling the Melon vine. It is sometimes called the Bitter Cucumber and Bitter Apple. The fruit is about the size and shape of an ordinary sized Pomegranate, or Orange, of a yellowish color when ripe. It is a native of Turkey, Western Asia, and some portions of Africa. The inside or pulpy portion is that which is used as medicine, and may generally be found in the drug stores in a dried condition, of a light grayish color, spongy texture, and about the size of a hen's egg; also in the form of a fine powder.

Medical Properties and Uses. — Colocynth is a powerful hydragogue cathartic, producing copious watery discharges from the Bowels. It has a tendency to produce severe griping, and in large doses, or if continued too long, will produce inflammation of the mucous coat of the Bowels, and painful, bloody discharges. It should, therefore, be combined with other agents, when given as a cathartic, such as the powder or oil of Cloves, or Peppermint, to prevent griping; and a solution of Gum Arabic or Elm Bark, to prevent its drastic action on the mucous surface of the Bowels. Colocynth is a valuable medicine, however, and among the best cathartics in cases of Dropsy, as it tends to draw off the watery accumulations. It is also a valuable cathartic, especially if combined with a little Podophyllin, or powdered

May Apple Root, in cases of Effusion or Congestion on the Brain, on account of its powerful revulsive effect. In such cases it acts promptly, and generally gives immediate relief. It is good also to rouse the Liver, in cases of congestion or torpor of that organ. Its principal use is in what is called Passive Dropsies, Affections of the Brain, and inactive conditions of the Liver and Digestive organs. It may, however, be used in all cases where a purgative is needed. Dose: of the powder, from five to ten grains; of the extract, and compound extract, from three to six grains.

Colombo African — (*Cocculus Palmatus*). — This species of Colombo, which is that usually found in the drug stores, is a native of South-Eastern Africa, where it grows abundantly, and is called *Kalumb* by the natives. It is a sort of climbing plant, or vine, having a large, fleshy, tuberous root. The root is found in our drug stores, either in fine powder or in transverse slices of about a third of an inch in thickness, and looks very much like the American Colombo, prepared in the same way.

Medical Properties and Uses. — It is also a pure bitter tonic; thought to be stronger and better than the American, though I very much doubt it. It is useful in Dyspepsia and Weak Digestion, in convalescence from Fevers, and in all weak and debilitated conditions of the system. It is also a good tonic in Chronic Diarrhea and Dysentery. It is said to be very good to counteract the vomiting which troubles some females during Pregnancy. It is used most generally in combination with other tonics and aromatics, like the American Colombo, in Restorative Bitters. Dose: of the powder, from ten to twenty grains; of the tincture, one to two tea-spoonfuls; of the infusion of bitters, from a half to a wine-glassful, two to three times a day.

Colombo American — (*Frasera Caroliniensis*). — This is the American Colombo, a native of the Western and Southern States, with straight, erect stalk, rising to the hight of from four to six or seven feet, and found growing mostly in rich barrens, open woods, and meadows. The stalk is from one to two inches in diameter at the bottom, tapering gradually to near the top, when it terminates in several branches. The leaves are from three to ten inches long, and from one to three wide, and come out in whorls or bunches of five or six, opposite each other, around the stalk. These whorls or groups of leaves commence at the ground, and are from eight to twelve inches apart at first, gradually diminishing the distance between them to the top. The flowers are of a light greenish yellow or white, and appear in June and July. The root is triennial, that is, it lives for three years; and the stalk and flowers do not appear till the third

year; during the first and second years, there is only a bunch of long, slender leaves coming out at or near the ground. The root is large, long, spindle-shaped, and soft, very much resembling a good-sized Parsnep in shape and color. The best time to dig the root is in the fall of the second year, or spring of the third.

Medical Properties and Uses.— The Colombo Root, which is the part used, is a simple, mild, but very good tonic. When fresh, or green, it is slightly emetic and cathartic. It should be well cleansed, then cut in thin pieces, crosswise, of about a quarter of an inch in thickness, and carefully dried in the shade; and when used, powdered or crushed. It is most commonly used in the form of Restorative or Tonic Bitters, in combination with other articles, such as Gentian Root, Poplar and Cherry-tree Bark, Dogwood, Golden Seal, Bitter Root, and the like. It may be used in powder in doses of twenty grains to a tea-spoonful, two or three times a day, and in infusion, in doses of a half to a wine-glassful three times a day, as a tonic and stomachic.

Comfrey — (*Symphytum Officinale*).— This plant is a native of Europe, but is very generally cultivated in our gardens for its medicinal properties. It is too well known to need any description. The root is the part used.

Medical Properties and Uses.— Comfrey Root is demulcent or mucilaginous, and somewhat astringent. It acts mainly on the Mucous Tissues of the system, as a soothing and healing agent, and is therefore good in Pulmonary Affections, as Coughs, Bronchitis, Bleeding of the Lungs and Incipient Consumption, as well as in Diarrhea, Dysentery, and in Leucorrhea, and other Female Weaknesses. It may be taken freely in the form of infusion, or in syrup; or may be used in the form of wine bitters, either alone or in combination with other articles, such as those named in conjunction with Chamomile Flowers. Externally, the Comfrey Root, bruised and made into a poultice, is an excellent application to Bruises, Wounds, Sore Breasts of females, and Painful Swellings. A syrup made of equal parts of Comfrey, Spikenard, and Elecampane Roots, is a most valuable remedy for Consumption, Coughs, and all Affections of the Lungs. Other suitable articles may be added.

Conium — (*Conium Maculatum*).— Known as Poison Hemlock and Poison Parsley. This plant is a native of Europe, but is found growing in many parts of the United States. It usually rises to the hight of three or four feet, growing erect, with numerous branches, having a round, hollow, smooth stalk, slightly striped, and covered with dark purple spots. The lower leaves are large, coming out around the joints of the stalk, in a sort of sheath: the upper leaves, those

attached to the joints of the branches, are much smaller. The flowers are small, white, and numerous. A more particular description is unnecessary, as you will hardly ever use this article, unless furnished you by a physician, or procured at a drug store.

Medical Properties and Uses.— The leaves and seeds are used, but mostly the extract, made from the leaves, and found in drug stores. Conium is a narcotic poison, and, although a valuable medicine in certain cases, is to be used in small doses, and with caution. It acts specially on the Nervous System, quieting the nerves, inducing sleep, and decreasing the action of the heart. It is, therefore, considered a valuable agent in Enlargement of the Heart, in Palpitation, and Inflammation of that organ, by allaying the excitement and reducing the action. It is principally used in cases of excited condition of the Nerves, or increased action of the Heart and Arteries. Dose: of the alcoholic extract, one to two grains, and may be repeated in three to six hours; of the ethereal extract (which is much the best), from one-fourth to half a grain. The common water-extract of this article is of no account. Either the alcoholic or the ethereal extract, or that made of the expressed juice, should be used. They are of a dark, rich green color, and can seldom be had except at first-class drug stores.

Coriander Seed — (*Coriandrum Sativum*).— Coriander is a small annual plant, growing from one to two feet high, and is generally cultivated in the gardens of this country. It is a native, however, of Italy and Southern Europe. It flowers in June, and the seeds ripen in August. The green or fresh plant, especially if rubbed or bruised, emits an unpleasant odor; but when the seeds become dry, they are very fragrant and agreeable, both in taste and smell.

Medical Properties and Uses.— The seeds only are used, and are stimulant, aromatic and carminative. Used mostly to improve or disguise the taste of other medicines. They are also used by some to season meats, and are very good in Sausages. Dose: from twenty to forty grains, or a tea-spoonful of the tincture.

Corn Snake Root — (*Eryngium Aquaticum*). — Sometimes called Rattlesnake's Master and Bear Grass. This plant is most common in the prairies of the Western States, grows from two to three feet high, and very much resembles young Corn, though having a much stouter and tougher leaf, and being more of a bluish-green color. The stalk usually divides into two or three branches near the top, bearing large balls covered with a white bloom. The leaves are long, like blades of Corn, having a number of sharp spikes or prickles along their edges, and one at the point of the leaf. You can not mistake it with this description. The root is bulbous, perennial, and only from one to two inches

long, being decayed or rotten at the bottom, and giving off numerous little branches or fibers around the sides.

Medical Properties and Uses. — The root is the part used, and is regarded as a valuable diuretic, expectorant, and stimulant. It is also regarded as an antidote for Snakebites, especially that of the Prairie Rattlesnake. For this purpose, the fresh root is to be bruised and moistened, applied to the wound or bite, and renewed often; at the same time, the patient is to drink freely of an infusion of the root. An infusion of the root is said to be a valuable remedy for Dropsy and Gravel; in which case it is to be drank freely, either warm or cold, for two or three days, and then followed by some good tonic bitters, such as Colombo Root, Dogwood, Poplar, Cherry-tree, and the like, for a few days; and thus continue to alternate, until a cure is effected.

Cotton Plant — (*Gossypium Herbaceum*). — This is a plant which produces the Cotton of commerce, the great staple of the Southern States, as well as some other parts of the world. The Cotton Plant is said to be a native of Asia; but it is so extensively cultivated in the warmer latitudes of this country, and is so generally known, that any description of it here would be unnecessary. The bark of the root and the seeds are the parts used as medicine. It is but a few years since this article has been added to the list of medicinal plants, and its virtues as such are probably not very generally known.

Medical Properties and Uses. — The bark of the root is emmenagogue — that is, it promotes the Menses, and will bring them on when they are obstructed It is also considered a valuable Parturient, to facilitate Parturition or Childbirth; said to be equally as efficient, more reliable, and much safer than Ergot. It is highly spoken of in these cases by those who have tested it. It will also produce Abortion, and, it is said, is extensively used by the slaves of the South for that purpose. It is used mostly in decoction — about 4 ounces of the bark of the root being boiled in 3 pints of Water down to 1 pint. As an emmenagogue, this quantity should be taken in the course of the day, in divided doses; as a parturient, it may be given in doses of about an ounce, or half a wine-glass, every twenty or thirty minutes. It is a good remedy in Dysmenorrhea, or Painful Menstruation. As an emmenagogue, its use should be continued daily, until the desired effect is produced; and this may often be hastened by taking at night an active cathartic — say three or four pills, composed of 2 parts Aloes and 1 part Podophyllin, or Extract May Apple Root. The Cotton Seeds are said to be a certain cure for Ague and Intermittent Fever. One dose has often been sufficient to effect a cure. Boil 1 pint of the Seed in 3 pints of Water down to 1 pint; one-fourth to one-half of this is to be drank warm, an hour before the expected return of the

chill. This is generally sufficient; but if not, it is to be repeated The leaves of the Cotton Plant are said to be diuretic, and useful in affections of the Kidneys and Urinary organs; of this, however, but little seems, as yet, to be known.

Cowhage — (*Mucana Pruriens*). — Called also Cowitch. This plant is a native of warm climates, and grows plentifully in the West Indies. It is a sort of climbing plant or vine, twining itself about trees, bushes, and whatever it can reach. It bears long, slender pods, and the bristles, or hair which covers these pods, is the part used. The Cowhage Pods can generally be found in our drug stores. Care must be used in removing the bristles, for they are like nettles, and if they come in contact with the hands or face, or any part of the skin, they will produce a most distressing itching.

Medical Properties and Uses. — The bristles or down which covers the pods, is used as a never-failing remedy for Worms — acting mechanically, by cutting and piercing them to death, when they are expelled by a brisk cathartic, to be given the next day. The manner of using it, is carefully to scrape it from the pod, into a little Molasses, until you have got about a tea-spoonful of the article into a table-spoonful or two of Molasses; it is then to be put carefully into the mouth and swallowed, so that none of it gets upon the skin outside. Cowhage does not seem to make any impression on mucous surfaces, and therefore produces no injury to the patient after once fairly in the mouth and swallowed. With proper care, therefore, in handling, it may be regarded as a safe and very certain remedy for Worms. The dose is from one to two tea-spoonfuls, given in Molasses or Syrup; to be followed always in about twelve hours afterward with an active purgative. Should any of it get on the hands or other parts, and produce Itching, apply Sweet Oil or Lard.

Cow Parsnep — (*Heracleum Lanatum*). — Known also as Masterwort and Wild Angelica. This is an herb found growing in meadows, and along fences, in rich moist lands, rising to the hight of three to five feet. It has a hollow stalk, covered with a sort of down, and extending branches at the top, which bear large bunches of white flowers, disposed in umbels. The leaves are large, hairy, and jagged. The root is perennial, large, spindle-shaped, and, when fresh, has a strong, unpleasant smell.

Medical Properties and Uses. — The root and seeds are used, and are anti-spasmodic, carminative, and expectorant; also slightly stimulant. The seeds are used in the form of infusion, in Flatulent Colic, to expel the Wind from the stomach, and for Dyspepsia or Indigestion, being a rather pleasant aromatic stimulant and stomachic. A strong decoction of the dried root, taken daily for several weeks, has

been found successful in curing Epilepsy. The powdered root, in doses of one to two tea-spoonfuls, given daily, has also been successfully used for the same complaint. It is also recommended in Palsy, Asthma, Dysmenorrhea, in either decoction or in substance. The root should be dried before using, as it is said to be poison while green.

Croton Oil — (*Oleum Tiglii*). — This oil is imported from the East Indies, where it is made from the seed of a tree called the *Croton Tiglium*. It is the most powerful purgative in use. One drop will operate on the bowels severely in about forty minutes. It has a hot, burning taste, like the juice of Red Pepper; a drop taken upon the tongue will often move the Bowels. This is a valuable medicine, and is used in obstinate obstructions of the Bowels; as in cases of severe Colic, and in cases where all other means have failed to procure a passage from the Bowels. It is a powerful medicine, and should be used with caution. The dose is from one to three drops, on a little Sugar, and may be repeated every two hours till it operates. But in most cases one dose, and even one drop, will be sufficient. On account of the smallness of the dose, it is well adapted to cases where a large dose of medicine can not be given, or where the patient can not swallow, as in extreme Coma or Stupor, Mania, and the like. In such cases, a drop or two upon the tongue will generally be sufficient. It is applicable to cases where the Bowels are very torpid and inactive, in comatose conditions, and as a hydragogue cathartic in Dropsy. It is often used externally as a Rubefacient, or to produce Irritation and Vesication, instead of the ordinary Blister Plaster. A few drops rubbed on will be sufficient.

Cubebs — (*Piper Cubeba*). — Cubebs, which may always be found in the drug stores, are the berries or fruit of a climbing herb, or vine, which grows wild in the woods of the East Indian Islands. They are also called Java Peppers. The berries are gathered before they are ripe and dried; when they are of a dark color, and about the size of the berries of the common Black Pepper. You will generally find Cubebs in the form of powder in the drug stores.

Medical Properties and Uses. — Cubebs are an excellent diuretic; also mildly stimulant, carminative and expectorant. They seem to act specifically on the mucous surfaces, and tend to check mucous discharges, especially from the Urinary Organs; hence they are a great remedy in Gonorrhea and Gleet, and are often used with benefit in Leucorrhea or Whites. They speedily moderate the inflammation and discharge in Gonorrhea, and in a majority of cases will cure it in less time than almost any other remedy. They possess what may be quite justly called a specific power, in most constitutions, especially when administered in the early and acute form of the disease. The

sensible effects of this remedy are exceedingly mild, barely imparting to the urine its own peculiar odor, and promoting its quantity. From my own experience in the treatment of this disease, I can bear strong testimony in favor of this remedy. That it will cure every case, is not to be expected; but from the numerous trials I have made, I am of the opinion that greater reliance can be placed on it than any other medicine for the cure of this disease. In some cases, I have been compelled to combine with it Balsam of Copaiba, 1 tea-spoonful of each, mixed, three times a day; but this was only in very difficult cases. A tea-spoonful of the powdered Cubebs, three times a day, in a tumbler of water, is generally sufficient in this disease, at the same time keeping the bowels freely open with Epsom Salts, together with rest, and a very low and cooling diet. In some cases, but there are very few of them, Cubebs occasion a flushing of the face, burning heat in the palm of the hands and soles of the feet; the head and stomach being more or less affected. When this is the case, I reduce the dose one-half. This medicine should always be given in half a tumbler of Cold Water, stirred up well to make it mix. Flax-seed Tea, drank cold through the day, will be found a great assistant in the cure of this disease. In Gleet and the Whites in women, Cubebs will be found highly beneficial, when used with Cold Slippery Elm Tea. There is also an Oil of Cubebs, to be had at the drug stores, which may be given instead of the powder. The dose is from fifteen to thirty drops, three times a day, in a little syrup or mucilage. Also an Extract of Cubebs, which may be used in the form of pills, generally in combination with as much Solidified Copaiba, giving two or three pills three times a day. A little Podophyllin or Extract of May Apple Root, sufficient to act gently on the bowels, will render them still better in Gonorrhea.

Cutting Almond—(*Parthenium Integrifolium*).—Called also Nephritic Plant. This plant is common in most of the Middle and Western States. The stalks, which grow from two to three feet high, and generally several springing from the same root, are round, hard, and of a dark red color. Leaves scattering, alternate, from eight to ten inches long, and oval shaped. Near the top the stalk divides into several branches — the branches going out from the axillary, that is, the angle, formed by the leaf and stalk. The flowers are a sort of white button, and appear from June to October. The root, which is the part used, is very singular. It starts out at first quite small, from a sort of head or bulb, soon increases in size, and finally terminates abruptly, as though it had been cut off; from this larger or bulbous part, other small roots go off, which increase in size and terminate in the same way.

Medical Properties and Uses.— The root is strongly diuretic, and considered highly valuable in most diseases of the Urinary Organs, such as Suppression of Urine, Gravel, Scalding of Urine, and Affections of the Bladder and Kidneys. The manner of using it is to slice the root into thin pieces, and infuse or macerate in Cold Water, and drink in moderate quantities, say a pint, more or less, per day. It is also considered a good aromatic and stimulating bitter.

Dandelion — (*Leontodon Taraxacum*). — This is a well known herb, growing in all parts of the country, in fields, yards, meadows, along roadsides, on the banks of creeks, and hillsides. It is an early spring plant, its leaves remaining green throughout the season. The young leaves are often used on the table as greens, and are both agreeable and healthy. The flowers are of a bright yellow color, attached around a sort of head, about an inch in diameter, at the end of a smooth, round, light-colored hollow stem, about the size of a large goose-quill, which rises from the center of the leaves to the hight of eight or ten inches. All parts of the herb contain, when fresh, a bitterish, milky juice, similar in appearance to that of Lettuce. The root is the part used as medicine, and is somewhat spindle-shaped, like small Parsneps, often branched, of a brown yellow color, being from a half to three-quarters of an inch thick, and six to ten or twelve inches long.

Medical Properties and Uses. —Dandelion Root is alterative, diuretic, laxative, and somewhat tonic. It loses much of its virtues by drying. It is mostly used in the form of extract, which, of course, should be made from the fresh root. The root is sometimes used in combination with other alteratives, and tonics, in making alterative and detergent syrups, decoctions, and bitters, especially where it is desired that the medicine should act on the liver and kidneys. Dandelion seems to act more especially on the Liver, as a gentle stimulant, and is considered valuable in torpor, inactivity, and congestion of that organ, and especially in what is usually termed Chronic Liver Complaint. In such cases the extract is generally preferable, and can either be had at the drug stores, or can be made by any one from the fresh root, by first bruising a quantity of it, and then boiling slowly till the strength is obtained, after which it is to be strained, and evaporated, by slow heat, down to a thick, soft extract. A decoction of the root, taken in quantities of half to a pint a day, is considered good in Dropsy, Affections of the Kidneys, and Diseases of the Skin. Dose of the extract: from five to twenty grains, once or twice a day. The extract is a very good article to use in making Liver Pills, by incorporating other more active agents, such as the following: Podophyllin, 20 grains; Leptandrin, 40 grains; Extract of Dandelion,

sufficient to form a pill mass; make into 40 pills. Dose: in cases of Liver Complaint, Indigestion, Costiveness, etc., one pill, once or twice a day. The addition of 10 or 20 grains of Ipecac, or pulverized Lobelia Seed, or Sanguinarin, will only make them better.

Devil's Bit—(*Liatris Spicata*).—Known also by the names of Button Snake Root, Backache Root, and Gay Feather. It is found plentifully throughout the prairies of the Western States. It has a bulbous root, about the size of a hulled walnut, somewhat spongy, and of a strong turpentine smell and taste. The stem or stalk is straight, rising from two to four feet high. Toward the top are numerous buttons or flower-heads, from a half to three-quarters of an inch in diameter, to which are attached the flowers, which are small, of a bright purple or dark bluish-red color, and appear in August and September. The root is the part used as medicine.

Medical Properties and Uses.—It is an excellent diuretic, and somewhat tonic and emmenagogue. Useful in Affections of the Kidneys, and Pain in the Back; hence the name of Backache Root. It is to be used freely in decoction or strong tea, and is considered good in Gleet, Chronic Leucorrhea, or Whites, and in all Diseases of the Kidneys. The dose of the decoction is half a teacupful three or four times a day. In some parts of the country it is considered also a sovereign remedy for Snakebite—in which case the fresh root is bruised, moistened with water, and applied to the wound, while the patient drinks freely of a strong decoction. The root yields its properties freely to Alcohol, and in cases of Kidney, Uterine and Urinary affections, it might be well to use it in the form of tincture or strong bitters, made in Gin.

Dewberry—(*Rubus Trivialis*).—This plant, sometimes called Creeping Blackberry and Low Blackberry, is a species of the Blackberry, having a small briery stem or vine, which runs along on the ground or grass, from three to six feet or more in length, leaves somewhat like the Blackberry, and bearing a large, sweet, juicy, and excellent dark red or black berry, very similar to that of the high Blackberry. It is usually found growing in dry, stony, gravelly ground, or old neglected fields, and common in most of the States.

Medical Properties and Uses.—The root is the part used, and is an excellent and healthy astringent, and somewhat tonic. It is very similar in its properties and effects to the root of the common or high Blackberry, and may be used for the same purposes, that is, in Diarrhea, Dysentery, and in all cases where a safe and efficient astringent is needed. The bark of the root contains the astringent properties, the woody part being almost useless. Used in decoction, or in syrup the same as the Blackberry Root.

Digitalis—(*Digitalis Purpurea*).—Known also as Fox-glove. It is an elegant plant, growing from two to four feet high, with a spike or top of beautiful bluish-purple flowers. It is a native of the southern portions of Europe, but is cultivated in gardens, in this country.

Medical Properties and Uses.—In large doses, Digitalis is an irritant narcotic poison, and capable of producing Vomiting, Purging, Extreme Prostration, slow and feeble Pulse, Delirium, Convulsions and Death. It must be used with care, if used at all. In moderate or proper doses, such as to bring the system safely under its influence, it increases the flow of urine, reduces the action of the heart to about fifty beats in a minute; attended usually with languor, slight nausea, dull pain in the head, and sometimes giddiness, confusion of the mind, and dimness of sight. When these attendant symptoms appear, the medicine should be discontinued for a few days. Digitalis is given in substance, that is, the powdered leaves, and in tincture. Dose: of the powder, from one to three grains; of the tincture, from ten to fifteen drops. The dose (of either) to be repeated two or three times a day, and should be gradually increased each day till the system is sufficiently brought under its influence. It is a sedative diuretic, and is most serviceable in cases of Hydrothorax, or Dropsy of the Chest, connected with Disease of the Heart or Kidneys. It is also used for Palpitation of the Heart, in severe Inflammatory Fevers, Mania, Epilepsy, and Spasmodic Asthma. It must always be used with great care, and the symptoms closely watched. Whenever its effects begin fully to appear, it should be stopped. In case of an over-dose of Digitalis, or too great a sedative effect, the remedy (after giving an emetic, if any of it is supposed to remain in the stomach) is Brandy, Wine, and other stimulants, and Mustard Drafts to the Stomach, Wrists and Ankles.

Dittany—(*Cunila Mariana*), *Mountain Dittany*.—A sort of Mint, found in most parts of the United States, growing among rocks, on dry knobs, hills, and stony places, and for this reason is also called Stone Mint. It usually grows from ten to eighteen inches high, having a smooth, purplish, slender, hard stem, with numerous branches, with small, smooth, deep green leaves, slightly bluish on the under side.

Medical Properties and Uses.—The herb is the part used. It has a warm, aromatic taste, and strong, fragrant smell, and is extensively used for Cold, Headache, and to excite Perspiration. It is considered tonic, stimulant, diaphoretic, nervine, and emmenagogue, and is used in Nervous Headache, Hysteria, Fevers, and in stoppage or Suppression of the Menses. Used freely in warm tea, or infusion.

Dogtooth Violet—(*Erythronium Americanum*).—Known most commonly, perhaps, by the name of Adder Tongue; called also Yellow

Snowdrop, Snakeleaf, and Rattlesnake Violet. It is a small plant, having but two leaves (but one the first year), which are smooth, lance-shaped, five or six inches long, and covered with dark purple spots, giving them a peculiar appearance. From between the two leaves rises a scape or stem, several inches high, on which appears a single yellow, nodding flower. The root is bulbous, covered outside with a sort of loose tunic, a number of small fibrous roots issuing from the bottom. The plant is common in the Western and Middle States, and appears early in the spring.

Medical Properties and Uses.—Both the root and leaves are used, and mainly as a poultice applied to Scrofulous Ulcers. It is emollient and suppurative, and seems to be peculiarly Anti-scrofulous, as an external remedy. The fresh root and leaves, or root alone, are to be stewed in sweet Cream or Milk, and applied to the Ulcers which usually break out on the neck, and other parts of the body, in cases of Scrofula, or King's Evil — healing them quicker, it is said, than almost any other application. The fresh leaves bruised and laid on the sores, are also good. A decoction of the article may also be drank at the same time. In large doses, it is slightly emetic.

Dogwood—(*Cornus Florida*).—This is a small, common, and, when in blossom, a most beautiful tree; well known throughout the United States. The tree is usually from twelve to twenty feet high; the wood compact and very hard; the flowers, which appear early in the spring, or about corn-planting time, of a beautiful clear white, making a very handsome appearance. The Dogwood usually grows on the upland and ridges, and is well known almost everywhere.

Medical Properties and Uses.—The bark of the tree and root is the part mostly used, being an excellent tonic, and somewhat astringent It is the best native tonic and substitute for Quinine and the Peruvian Bark that we have, being very similar in its properties to the Cinchona, and very nearly as good. The flowers are sometimes used as a mild strengthening bitters, especially for Female Weaknesses. The bark of the root is probably preferable to that of the tree; and the best way to use it, as a tonic, or Ague medicine, is in the form of extract, made by boiling in water, and evaporating down to a thick, stiff extract. It can then be made into pills, with the addition of such articles as may be thought best, such as Quinine, Salicine, Hydrastin, Cayenne, and the like. Dose: of the powdered bark, from a half to a tea-spoonful; of the extract, from five to ten grains; and may be repeated from three to six times a day, as a remedy for Ague. The bark is often used, generally along with other articles, as bitters; the ripe berries also, as well as the flowers.

Dragon's Claw—(*Pterospora Andromedea*).—Known also by the

names of Crawley, Pine Drops, and Fever Root. It is a peculiar plant, very much resembling the Beech Drops in size and appearance, growing from eight to twenty inches high, without leaves; flowers pale-yellow or reddish-white. The stem or stalk is straight, dark-brown or purple, and covered with a sort of short, sticky wool, and a few scales, answering for leaves. The root is small, of a dark color, resembling the claws of a hen. Grows in the hilly parts of the Northern States and Canada, on barren uplands, pine hills, and hard clay soil.

Medical Properties and Uses.—Dragon's Claw, or Crawley Root, is one of the best diaphoretic or sweating medicines known, in all cases of Low, Typhoid, and Inflammatory Fevers. It promotes perspiration without increasing the heat of the system, or action of the heart—being sedative and diaphoretic, but not stimulant. It is not a plentiful root, scarce everywhere, and seldom to be met with in the Western States. It can generally be had at the Eclectic drug stores in Cincinnati and St. Louis. It is valuable in all low stages of Fevers, as a cooling, non-exciting, but efficient diaphoretic. The dose is twenty to thirty grains of the powdered root, to be given in warm Water or warm Catnip Tea, repeated every hour or two. It is also highly valuable in After-pains, in Dysmenorrhea, and the like, in which cases it should be combined with the Caulophyllum, or Blue Cohosh.

Dwarf Elder—(*Aralia Hispida*).—This is a small species of the Elder—a sort of shrub, growing from one to two feet high, the lower part hard and woody, with numerous short, sharp bristles, the upper part soft and herbaceous. The berries hang in bunches—ripen in the fall—are round, smooth, black, containing three irregular-shaped seeds, and are nauseous and unpleasant to the taste. This shrub grows throughout the Eastern and Middle States, along fences, in rocky places, and along roadsides.

Medical Properties and Uses.—The bark, and especially the root, is diuretic and alterative, and considered quite valuable in Dropsy, Suppressed Urine, Gravel, and all Affections of the Kidneys and Urinary Organs. Used in decoction. Dose: from a half to a teacupful, three or four times a day.

Elder—(*Sambucus Canadensis*).—This is the common and well known Elder, which grows all over the country, in thickets, waste places, old fields, and along fences, from six to eight or ten feet high, flowering in May and June; the flowers being small, white, covering the whole top of the bush, and of a fragrant and agreeable smell. The fruit or berries are small, very numerous, hang in large bunches, juicy, sweetish, slightly acid, and of a dark purple or black color,

when ripe. The stalk is jointed, containing a large, spongy pith, and is often used for Spiles in tapping Sugar-trees, and for Popguns by the boys.

Medical Properties and Uses.—The flowers, berries, inner bark of the stalk, and the root, are all medicinal, and may be used with advantage in various diseases. An infusion of the flowers, taken warm, is diaphoretic and mildly stimulating; taken cold, is diuretic, alterative, and detergent, or purifying to the blood. The tea of Elder Flowers is good for children, in all derangements of the Bowels and Liver, and in Eruptive Diseases, Erysipelas, and the like. The juice of the berries, evaporated down till it is about as thick as Molasses, and given in doses of one or two table-spoonfuls, and repeated, acts as a valuable laxative and alterative; and in large doses, as a cathartic. The flowers form an important ingredient in some of the best alterative syrups, for the cure of Scrofula, Syphilis, Eruptive and other Constitutional Diseases. The inner bark is diuretic and moderately cathartic. Tinctured in Sour Wine or Cider Vinegar, it is a good remedy in most cases of Dropsy, taken in doses of one to two ounces, three or four times a day—acting as an alterative and diuretic. The root or bark may be tinctured in Gin, and used for the same purposes. A Salve or Ointment, made by stewing the inner fresh bark in Lard, is excellent in cases of Burns and Scalds, and by melting a little Rosin and Beeswax with it, makes a good Salve for Cuts, Sores, and Ulcers.

Elecampane — (*Inula Helenium*).—This is a well known plant, being cultivated in most of our gardens for medicinal purposes. The root is the part used.

Medical Properties and Uses.—Elecampane is aromatic, diuretic, and expectorant, as well as somewhat tonic and emmenagogue. It is used mostly in Chronic Affections of the Lungs, and Incipient Consumption; generally along with other articles, such as Comfrey, Spikenard, Blood Root, Black Cohosh, and the like, in the form of syrup. Boiled in Sweet Milk, it is said to be a good remedy for obstructed Menses. Dose: of the powdered root, from twenty grains to a dram or tea-spoonful; of the infusion or decoction, from half to a teacupful. May be taken freely.

Ergot — (*Secale Cornutum*).—This is simply what is known as Blasted Rye; sometimes called Spurred Rye, from its resemblance to the spur of a cock. It is in grains, usually, as found in the shops, of a dark brown color, hard and brittle, from half an inch to about an inch in length, and about a fourth of an inch in diameter. It may be gathered at any time in the rye-fields, about harvest time, and can always be found in the drug stores.

Medical Properties and Uses.—It is a powerful parturient and

abortive, and should never be used except in the advanced stage of Parturition, or Labor, and is then used for the purpose of causing the uterus or womb to expel the child — or, after Delivery, to cause an expulsion of the After-birth. Where Labor has actually commenced, and there is no serious mechanical obstruction to Delivery — no deformity of the pelvis of the mother, no wrong presentation of the child, and the only cause of the slow progress of Labor is that the uterus is inactive and does not sufficiently contract — Ergot may be given with safety. But it should always be given with caution, and the physician or midwife should first be certain that no mechanical obstacle to its use exists, for it generally acts speedily and efficiently. After Delivery, if the Placenta, or After-birth, does not come away, and the uterus seems indisposed to expel it — especially if there is Hemorrhage — it may also be given, and generally with advantage. The way to administer it is to put from one to two tea-spoonfuls of the powdered Ergot into a teacupful of Boiling Water, stirring it, and after it has infused for ten or fifteen minutes, give of the infusion table-spoonful doses about every ten minutes, until Labor Pains are induced, and the desired effect is produced; or a dose of fifteen to twenty grains may be given at once, first steeped in Hot Water. It acts very promptly, and usually in ten or fifteen minutes. Ergot has also been recommended in cases of Diarrhea, Dysentery, Gleet, Leucorrhea, Hysteria, and some other diseases; but it should never be taken by pregnant females, except as a Parturient, as it produces Abortion or Miscarriage at any stage of Pregnancy, especially if continued, or taken in doses of one or two tea-spoonfuls.

Oil of Ergot. — There is an oil obtained from the Ergot, now considerably in use, and may be used for the same purposes. The dose is from twenty to thirty drops, given in some warm Herb Tea, and repeated same as the infusion, until the desired effect is produced.

Erigeron — (*Erigeron Canadense*).— Known as the Canada Fleabane, Colt's Tail, and Butter Weed. This plant is common throughout the Western and Middle States, growing in old fields, burnt places, and along the sides of roads. It usually grows from four to six feet high, with a branching top, and bunches of small white flowers on the tops of the branches. The leaves, when rubbed, have a feeble, but disagreeable odor, and a bitterish, astringent taste. It yields its properties to both Water and Alcohol, but is injured by Boiling, as its Volatile Oil escapes.

Medical Properties and Uses. — The leaves and flowers are the parts used, and are diuretic, tonic and astringent. It has been used with advantage in Gravel, Diabetes, Dropsy, Dysentery, Diarrhea, and Affections of the Kidneys, in the form of infusion.

Oil of Erigeron. — There is an oil made from this herb, by distillation, which is considered a valuable astringent, both externally and internally — externally, applied to small Wounds, Bleeding Piles, and the like, to stop the bleeding; internally, in Diarrhea, Dysentery, and in Bleeding from the Lungs, Stomach or Urinary Organs. Dose: of the oil, from three to six drops, on a little Sugar, and repeated often, say every ten or fifteen minutes, in cases of emergency. It is an excellent remedy in Hemorrhage from the Womb, or Flooding. The infusion of the leaves may be taken freely, that is, from half to a teacupful, three or four times a day. There are two other species of the Fleabane — the *Erigeron Philadelphicum*, and *Erigeron Heterophyllum* — which are very similar in appearance and properties to the Canada species.

Fennel-seed — (*Feniculum*). — The stalk of the common Fennel, or *Feniculum Vulgare*, grows from two to four feet high, and is cultivated in our kitchen gardens. The seeds are used both as medicine, and for flavoring confectioneries and meats.

Sweet Fennel. — There is a kind called Sweet Fennel, also cultivated in this country, very similar to the common Fennel, except that it is considered sweeter and more agreeable.

Medical Properties and Uses. — Fennel-seed have a fragrant, agreeable odor, and warm, sweetish, aromatic taste, and are carminative and stimulant. Used medically to relieve Flatulent Colic, Griping, and the like, mostly in children. Also combined with other medicines to render them more agreeable. Used mostly in infusion or warm tea. Dose: of the powdered seed from ten to thirty grains.

Fever-few — (*Pyrethrum Parthenium*). — Sometimes also called Feather-few. It is a native of Europe, but is cultivated in this country, and is sometimes found growing wild. It usually grows from one to two feet high. The leaves are of a grayish-green color; flowers white, and appear in June and July. The leaves are the part used.

Medical Properties and Uses. — It is a tonic nervine; also emmenagogue, vermifuge, slightly diuretic and diaphoretic. Used freely in infusion, warm and cold. The warm infusion is considered good in Colds, Irregularity of the Menses, Suppressed Urine, Hysterics, and as a diaphoretic in Fevers. The cold infusion is an excellent tonic nervine, and taken for several days in succession, is an almost infallible remedy for Chorea, or St. Vitus' Dance, and especially in young girls, near the age of puberty, where it is probably connected with or dependent upon imperfect Menstruation. In all mild and recent cases of Chorea, it may be relied on. From half a pint to a pint of the infusion is to be taken daily, cold, divided in two or three doses.

The infusion, warm or cold, may be taken freely, that is, a teacupful two or three times a day. In Chorea, and other Nervous Weakness, I have sometimes combined with it the Lady Slipper Root and the leaves of the Skull-cap, with advantage.

Fire Weed — (*Erechthites Hieracifolius*). — This is a rank, and, in many places, very common weed, growing all over the Northern and Western States, in moist and open woods, in clearings, and especially in places where the ground has been burnt over. It has a large, rough, soft stalk, from two to five or six feet high ; large, irregular, light green leaves, and white flowers. It is generally known by the name of Fire Weed, and probably takes its name from the fact that it is disposed to grow in places that have been burned over, as where brush heaps have been burned. The plant has a peculiar, strong, and unpleasant odor, and slightly bitter, disagreeable taste.

Medical Properties and Uses. — The whole plant is medicinal, but the leaves are principally used. It is alterative, detergent, tonic, and, in large doses, slightly emetic and cathartic. Considered valuable in all Affections of the Mucous Tissues, as of the Stomach, Bowels, Lungs, and Urinary Organs. It is highly recommended by some in Dysentery, Cholera, and Cholera Morbus, and in Summer Complaints. As an alterative and detergent, or purifier of the system, it is probably an important article, as in cases of Skin Diseases, Boils, Pimples, Nursing Sore Mouth, Erysipelas, Scrofula, Sore Eyes, and whatever is depending upon bad humors in the blood or system. It is made in infusion or tincture, or in the form of bitters ; to be taken in moderate sized doses, two or three times a day — say from one to two table-spoonfuls, owing to the strength. There is an oil obtained from it by distillation, called *Oil Erechthites*, the dose of which is from three to six drops, twice a day. The Fire Weed is, beyond doubt, the basis of " Kennedy's Medical Discovery," a medicine which is, just now, quite popular.

Five-finger — (*Potentilla Canadensis*). — Known also by the name of Cinquefoil. This is a sort of vine, or procumbent herb, from twelve to eighteen inches long, and takes its common name from having five leaves in a bunch. It grows usually in meadows, on the edges of banks, and by the roadsides ; flowers yellow, appearing from early spring till fall. The root is the part used, and is of a bitterish, astringent taste.

Medical Properties and Uses. — It is considered a tonic astringent, valuable in Night Sweats ; also in immoderate or excessive flow of the Menses, in Uterine Hemorrhages, Flux, and the like. It is to be taken freely in decoction, either boiled in Water or Milk. A de-

coction has been found useful as a gargle for Ulcerated Sore Mouth and Throat, and as a wash for Spongy, Bleeding Gums.

Flax-seed — (*Linum Usitatissimum*). — Flax is an herb too well known to need any description.

Medical Properties and Uses. — Flax-seed is an excellent demulcent and emollient, and is used both internally in infusion or mucilage, and externally as a poultice. Internally, Flax-seed Tea, or Mucilage, is extremely useful in all inflammatory diseases of the Urinary Organs, in Coughs, Affections of the Lungs, and in Dysentery or Flux. For an infusion, 1 ounce of Seed to 1½ pints of Boiling Water, is about the proportion; infuse in a pitcher or teapot for an hour or two, and this quantity may be drank during the day. It may be sweetened, and the addition of a little Lemon Juice, or a bit of the Lemon Peel, will render it more agreeable. Flax-seed makes an excellent poultice, by boiling a quantity in either Water or Sweet Milk, in all cases of severe inflammation, and Inflammatory Sores and Ulcers. It may be used either alone, or with a little Corn-meal, or powdered Elm Bark.

The Oil.—The Oil of Flax-seed, called Linseed Oil, is a very good substitute for Castor Oil, being much milder in its action. It is said to be an excellent remedy for Piles, given in doses of one to two ounces, twice a day, and continued for several weeks. Combined with a little Lime Water, it is a good application for recent Burns and Scalds.

Gamboge — (*Gambogia*). — Gamboge is a sort of resinous gum, hard, brittle, and of a deep yellow or orange color. It is not very well settled as to what it is derived from, but it is supposed to be from a tree (the *Hebradendron Gambogioides*) which grows on the Island of Ceylon. It may always be had at the drug stores.

Medical Properties and Uses. — It is a drastic hydragogue cathartic, acting very powerfully, producing Nausea, Griping, and Copious Watery Discharges from the Bowels — on which latter account it is often used in cases of Dropsy. It is seldom used alone, however, being too drastic and severe. Combined with other purgatives, as Aloes, Podophyllin, Colocynth, and the like, its action is much modified. The dose is from two to six grains, in powder or pills.

Garlic — (*Allium Sativum*). — This is the common Garlic, said to be a native of Sicily, but is cultivated in the gardens of this country, and is extensively used in cookery by the French, Spanish and Germans. The bulb or root is the part used as a medicine. There is a great variety of Garlics.

Medical Properties and Uses. — Garlic is a stimulant, diuretic and expectorant, and applied to the skin, rubefacient, that is, it will produce a blister. The medical uses of Garlic are very numerous, it being

recommended by some as a valuable expectorant in Consumption and all Affections of the Lungs; by some as an important diuretic in Dropsies; and again by others, as a remedy for Fevers, especially of the Intermittent type. It is generally considered a good remedy for Worms, and is often given to children for that purpose. It is an excellent remedy in Nervous and Spasmodic Coughs, Hoarseness, and the like; and may be given in the form of syrup, tincture, or in substances; but the best way to use it when fresh, is to express the juice, and mix it either with syrup or some other proper vehicle. The juice of Garlic mixed with Sweet Oil, or Garlic stewed in Sweet Oil and then strained and squeezed out, is one of the very best remedies for Deafness, as well as for Ear-ache. In case of Ear-ache, a little Laudanum should be added. A few drops upon a warm tea-spoon, and dropped into the ear, and then stop it up with Cotton, is the way to use it. Externally, Garlic is a valuable application. The bruised fresh roots, or if dry bruised and moistened, and applied in the form of a poultice, is an important revulsive, in certain cases. In Pneumonia or Lung Fever, it is good applied over the chest and spine; in Disorders of the Head, Inflammation of the Brain or Brain Fever of children, it has been applied to the feet and stomach, and proved beneficial; in Retention of the Urine from inactivity of the muscles of the bladder, applied over the region of that organ, it has been found efficacious; and in cases of severe Spasmodic Croup, a poultice of Garlic (or Garlic and Onions), prepared by first roasting them, will always give immediate relief, if not effect a cure. A little powdered Lobelia (herb or seed), mixed in with the Garlic Poultice, will often render it still better in Cases of Croup; or the Tincture of Lobelia may be used. The poultice is to be applied warm to the throat and upper part of the chest. A decoction of Garlic, made by boiling in Milk, and a pint of it drank daily, has cured Stone in the Bladder, or Gravel. A little Garlic, stewed in Honey and Sweet Oil, is considered by some an infallible Cough remedy. Garlic may be taken in almost any sized doses. Dose: of the juice, about half a tea-spoonful; of the decoction, from one to three or four table-spoonfuls.

Gentian — (*Triosteum Perfoliatum*). — This is a well known plant, growing wild in most of the States, in dry, rich soils, in the woods, and around the edges of hazel thickets. It is sometimes called Feverwort, Horse Ginseng, and, on account of its berries, Yellow Gentian. Several stalks generally grow from the same bunch of roots; height from two to three feet; the leaves come out from the stalk opposite each other, and grow together, so that the stalk seems to pass through them, similar to the Boneset; flowers of a reddish color, followed by large yellow berries, which set close to the stalk, at the origin and

upper side of the leaf. The root is light-brown, long, round, tapering and bunchy, and of a pungent, bitter taste. Both the root and berries are used as medicine.

Medical Properties and Uses.—Gentian Root is an excellent bitter tonic and restorative, laxative, somewhat stimulant, and in large doses cathartic. It is used mostly as bitters, along with other articles and in the form of extract and pills. Useful in Intermittent Fevers, especially as a restorative tonic after the Fever and Ague have been broken. The ripe berries also make an excellent bitters, tinctured in Whisky or Gin. Dose: of the extract, from six to ten grains. Seldom used alone.

Geranium — (*Geranium Maculatum*).—Known most familiarly in the country by the names of Crane's Bill, Crowfoot, and Alum Root. It grows usually from ten to fifteen inches high, generally in rich soils, in thickets and shady places, along the banks of creeks and hillsides, having a slender, wiry, smooth stalk, and a bunch of two or three ragged leaves at the top. Flowers large and purple, appearing from April till June. The root, which is the part used, is thick, rough, and knobby, of a brown color, and has a sourish and very astringent taste, puckering up the mouth like Alum; hence the name of Alum Root.

Medical Properties and Uses.—It is a pure and powerful astringent, and one that may always be used with safety and confidence. Useful in Diarrhea, Dysentery, Cholera Infantum, or Summer Complaint, and in all cases where astringents are needed. A strong decoction is an excellent gargle in cases of Aphthous Sore Mouth and Ulceration of the Throat; also to wash old, indolent Ulcers. As a remedy in Dysentery or Diarrhea, it may be used in decoction, either alone or in combination with other astringents; or it may be given in powder, in doses of ten to thirty grains. The decoction may be given in doses of a fourth to a half teacupful, and repeated several times during the day. For children, a very good plan is to boil the root in Sweet Milk, until you have obtained the strength, sweeten with White Sugar; and if you add a little Nutmeg, Cloves and Cinnamon, you make it all the better. This is a splendid remedy for the Summer Complaint, and may be given freely.

Ginger — (*Zingiber Officinale*).—This is the root of a plant said to be a native of Southern Asia, but is cultivated extensively in both the East and West Indies. It is to be found in all the grocery and drug stores, either in the root or in powder, and is too well known to need description.

Medical Properties and Uses.—Ginger is an aromatic stimulant, diaphoretic and emmenagogue. It is also tonic and carminative.

Useful in Flatulent Colic, Pains in the Stomach and Bowels, in Weak Digestion, in Colds, in Stoppages of the Menses from taking cold; to be taken freely in warm tea or infusion, generally on going to bed. It is very useful in Diarrhea and Bowel Complaints, in combination with astringents, especially in Cholera Morbus. A syrup made of Ginger, Rhubarb, and Geranium, is also very good for Summer Complaint. The infusion is made by adding 1 pint of Boiling Water to ½ ounce of the powder, or bruised root. It should never be boiled, as it injures its strength and destroys its aromatic flavor. From a teacupful to half a pint or more of the infusion may be taken at once. Dose: of the powder, from twenty grains to a tea-spoonful, owing to the purity and strength of the article. Ginger is a component part of the celebrated Composition Powders.

Ginger Syrup.—This is made by bruising 2 ounces of Ginger Root, and covering it with 1 pint of Boiling Water; let stand twenty-four hours, then strain, and add 2 pounds of White Sugar, and dissolve with a gentle heat, so as to form a syrup. It is used to give a pleasant flavor to Drinks, and also to destroy the taste of Unpleasant Medicines.

Ginger Beer.—Popularly known as Ginger Pop. Take of White Sugar, 2 pounds; Cream of Tartar, 2 ounces; bruised Ginger Root, 2 ounces; add two gallons of Boiling Water, and 1 teacupful of Hop Yeast; let stand twenty-four hours, and then bottle for use.

Ginseng — (*Panax Quinquefolium*). — Ginseng has a thick, soft, whitish, bulbous root, from one to three inches long — generally two or three roots to a stalk — with wrinkles running around it, and a few small fibers attached. It has a peculiar, pleasant, sweetish, slightly bitter, and aromatic taste. The stem or stalk grows about a foot high; is smooth, round, of a reddish-green color; divided at the top into three short branches, with three to five leaves to each branch, and a flower-stem in the center of the branches. The flower is small and white, followed by a large red berry. Found growing in most of the States, in rich, shady soils.

Medical Properties and Uses. — The root is a mild tonic nervine, and somewhat stimulant and diuretic, and may be used either in substance, decoction, or tincture — most commonly used in Bitters, along with other articles. It is useful in Nervous Debility, Weak Digestion and Feeble Appetite, as a stomachic and restorative. It is considered a very valuable medicine for children; and has been recommended in Asthma, Palsy, and Nervous Affections generally. Dose: of the powdered root, from one to two tea-spoonfuls, in a little hot water sweetened; of the decoction, from a fourth to half a teacupful two or three times a day.

Golden Seal — (*Hydrastis Canadensis*).— Called also Yellow Root and Yellow Puccoon. The top of this article looks somewhat like that of the Ginseng, growing about the same hight; the stalk a little larger, of a dark-green color, forked usually at the top, each branch having two or three rough, dark green leaves, with a single white flower in the center, followed by a red berry, somewhat like the Raspberry, containing a number of small seeds. The root, which is the part used, is crooked, wrinkled, rough, and knobby, about half as thick as the little finger, of a bright yellow color inside, and of a strong but agreeable bitter taste. Found growing in rich, shady soils and hill-sides, throughout the Middle and Western States.

Medical Properties and Uses. — Golden Seal is a pure and very excellent tonic. It is among the most valuable of the Botanic remedies. It is not only a powerful tonic and restorative, but exerts an especial and healthy influence on the Mucous Tissues — is extremely valuable in Aphthous and other kinds of Sore Mouth, in Ulcerations of the Stomach and Bowels, in Chronic Dyspepsia; and in combination with such astringents as Blackberry Root, Geranium and the like, forms an excellent remedy in Chronic Diarrhea and Dysentery. An infusion of it, used when cold, is a valuable wash for Chronic Sore Eyes; also for Cuts and Sores. A strong decoction of the Golden Seal and Geranium, is a valuable injection for females in case of Chronic Leucorrhea, or Whites; also good in Gleet and Gonorrhea. As a tonic and restorative, it may be used in recovery from Bilious, Intermittent and Typhoid Fevers; in torpidity of the Liver, Dyspepsia, and in all cases where a good restorative medicine is needed. Dose: of the powder, from ten to twenty grains, once or twice a day; of the tincture, one to two tea-spoonfuls; and may be used freely in Bitters, along with other bitter tonics.

Hydrastin. — This is the concentrated preparation made from the Golden Seal. It is in the form of a fine, crystalline yellow powder, and can generally be found at the drug stores. Dose: from half a grain to one or two grains. Used for the same purpose as the root, and especially in combination with Quinine in the treatment of Bilious and Intermittent Fevers, or with Leptandrin in Chronic Dysentery, or Flux.

Golden Thread — (*Coptis Trifolia*). — This is a small evergreen plant, growing in the colder parts of the United States, and the Canadas, usually in shady swamps and low woodlands, and having a fine threadlike, creeping root, of a bright yellow or gold color. The root can generally be found in the drug stores. It is sometimes called Mouth Root.

Medical Properties and Uses.— The root is a pure bitter tonic,

very much resembling, in its properties and uses, that of the Golden Seal. Good in Dyspepsia, Feeble Digestion, Weakness of the system, or in convalescence from Fevers, and wherever a bitter tonic and restorative is needed; to be used in tincture or decoction, or as bitters in ordinary-sized doses. It is mostly used, however, as a gargle or wash for Sore Mouth and Throat, for which it is very good.

Grape-vine — (*Vitis Vinifera*).— This is the common Grape-vine, found growing wild in all parts of the country, as well as being extensively cultivated in many places; the medical properties of the wild and tame Grape-vines being the same. The Grape is a native of most of the temperate parts of the four quarters of the globe, and is successfully cultivated between the thirtieth and fifty-first degrees of latitude. Through the effects of culture and a difference of soil and climate, numerous varieties of Grapes are produced, which differ widely in shape, color, and taste, and affording Wines which are known to be extremely various; many of which, imported from Europe, are greatly adulterated with Vegetable and Mineral Poisons, so that it is difficult in this country to get pure Wines, unless imported for private use. This business has become so profitable in Europe and the United States, that the disgraceful practice has become a source of great interest.

Medical Properties and Uses.— The leaves and small branches have an astringent taste, and are good for Diarrhea and other disorders requiring cooling and styptic or binding medicines, to be given in decoction. The juice, or sap of the vine, has been recommended in Diseases of the Bladder, such as the Stone, Gravel, etc., and is said to be an excellent application for Weak Eyes. In relation to this matter, all I can say is, for these diseases they are highly recommended, having never tried them myself; but as to the Grape-vine, I consider it one of the most valuable medicines in the world for Dropsy. I cured a lady in Louisville, Kentucky, of this disease, whose case was considered hopeless. She had been tapped six times, and twenty-six gallons of water taken from her, averaging from four to six gallons at a time. Prof. Gross and Dr. Richardson, together with several other medical gentlemen of great distinction, including Prof. Cobb, Dr. Knight, and Prof. Meigs, of Philadelphia, were consulted in this case. At the time I was called to take charge of the case, there was, apparently, upward of five gallons of water in the abdomen, and it was only with the greatest care that she could be turned with safety. In three months the water had entirely disappeared, and her general health was perfectly restored. This extraordinary and rapid cure was effected by one of the most simple of Nature's remedies, the Grape-vine, aided by the Vapor Bath. The Grape-vine was carefully burned

into ashes, and administered in doses of a heaping tea-spoonful three or four times a day, in a wine-glass of Madeira Wine. The Vapor Bath was used once every twenty-four hours. Catawba Wine would be equally as good, if not better.

Culture of the Grape.— Much attention has been given, of late years, to the cultivation of the Grape and the manufacture of Wine, in some of the Western States, especially in Ohio, Kentucky, and Missouri; and with very great success. The time is not very far distant when the cultivation of the Grape throughout the Western States will become much more general, and will prove a profitable business. There is not a great variety of Grapes in the United States; but yet, among them, we possess a highly valuable kind, the Catawba. It being so distinguished in regard to the vigorous growth of the vines, the fine quality of the fruit, and the excellence of the Wine, satisfied me that no other country will ever be able to raise this kind with the same success, and that, therefore, the Catawba Wine of this country will stand, at some future time, in the range of the articles without competition in the whole world. The quantity of Wine which can be raised on one acre, amounts to from three to five hundred gallons, which I calculate to be a moderate average. The price of Catawba Wine stands now (when currency was on a gold basis) at one dollar and fifty cents per gallon; but if calculated at only one dollar per gallon, the crop of an acre amounts to about four hundred dollars. Deducting from this amount one hundred and fifty dollars, as expenses, to the acre (which is rather too high, as one man is sufficient to tend an acre), it will be seen that two hundred and fifty dollars clear profits remain to the acre, which is as much as a capital of two thousand five hundred dollars, bearing an interest of ten per cent. There is certainly no produce in the world showing results equal to this; hence it is that almost every German emigrant who can afford to buy a piece of land, turns his attention immediately to the cultivation of the Grape, and becomes wealthy. Almost any kind of soil will do well for planting Grape-vines, and this, in itself, is great encouragement to enter into the cultivation. Every man who owns a farm or plantation, or even but a small plat of ground, should devote a small portion of it, at least, to the Grape. If he has a poor spot of ground, hilly, or worthless for other purposes, he may soon make it, in proportion to its size, his most valuable ground.

There are several manuals and small works published on the Grape Culture, such as Remlin's *Vine Dresser's Manual; The American Grape Grower's Guide*, by Chorlton; Allen's *Practical Treatise on the Culture of the Grape;* and some others, any one of which is sufficient to enable any farmer or gardener to successfully cultivate the

Grape, and manufacture Wine from it. But probably the best work on the subject, for the Western States, is a little book published at Cincinnati, on the *Grape and Strawberry Culture and Wine-making*, by Buchanan and Longworth. This includes the Strawberry also, an important fruit, and is well adapted to the wants of the Western people. Any of these books can be had at Cincinnati; they are small, and only cost from seventy-five cents to a dollar.

Select List of American Grapes. — The Catawba deservedly stands at the head of the list, both for table use and wine. For some years past it has been cultivated extensively near Cincinnati, for Wine, and from which large quantities have been made, equal to the best Hock Wines of Europe. In 1847 Mr. Longworth made six thousand, and Mr. Miller four thousand bottles of Champagne Wine, and that, too, of a quality that readily commanded twelve dollars per dozen at that time. It is hardy all over the Union south of New York, and is cultivated with success on the banks of the North River.

The Isabella is certainly better known and more extensively cultivated than any Grape in this country. It is hardy, vigorous, and exceedingly productive, single vines often producing ten bushels each. An excellent Wine is made from this Grape, equaling, when it has a little age, the finest Madeira.

The Alexander: this is called at Cincinnati the Cape Grape; at Vevay, Ind., Constancia; at York, Penn., Madeira; at Flushing, New York, Schuylkill Muscadel. It is rather coarse and pulpy for table use, but makes a good red Wine. At Cincinnati, it is only excelled by the Catawba in the estimation of Wine-growers.

The Elsinburg is highly esteemed by many as a table Grape. It is without pulp, sweet, and of delicious flavor; the fruit small; but a good bearer.

The Bland or Powell Grape, in flavor and appearance, resembles the Chasselas Grape of Europe. It is a shy bearer, but for its many good qualities, should find a place in every garden, as the fruit keeps well for winter use, when packed in jars. It should always be planted in a warm place.

The Ohio, or Longworth's Ohio, is an excellent dessert fruit, but small and very similar in appearance to the Elsinburg; it is without pulp, and produces large bunches, sometimes measuring fifteen inches in length. It ripens early, and is an excellent bearer.

Norton's Virginia Seedling is, in appearance and size of fruit, very similar to the Ohio and Elsinburg. It is very productive, both in the garden and vineyard, and is especially valuable at the South, where many kinds rot in wet seasons.

The Missouri is cultivated at Cincinnati, and from it is made a Wine resembling Madeira. It is rather a shy bearer.

The Lenoir is an excellent table Grape, superior, in the estimation of Downing, to any of our native Grapes. It has the habit of a foreign vine, but bears and ripens well, as far north as Newburg.

The White Scuppernong is the great Wine Grape of the South, and is found growing wild from Virginia to Georgia. It is known from all other Grapes by its small leaves, which are seldom over two or three inches in diameter. At the South it is a prodigious bearer, one vine having produced one hundred and fifty gallons of Wine in one season. For many years, an excellent Wine has been made from this Grape. The Scuppernong does well only in the Southern States, being too tender for the North. All things considered, we think that the three most valuable varieties of Grapes in this country, are the three we have first named — the Catawba, Isabella, and Alexander.

Ground Ivy — (*Glechoma Hederacea*). — This is a low creeping sort of herb, common in Europe and the United States, generally found growing in shady places, along fences, in orchards, and the edges of moist meadows, and sometimes in gardens ; flowers of a bluish purple, appearing from May till August. It is also called by the very poetic name of *Gill-over-the-ground.*

Medical Properties and Uses.— The leaves are the part used, and are of rather a disagreeable odor, and somewhat bitterish, aromatic taste. It is considered tonic, pectoral, alterative, and diuretic, and of a purifying and healing nature. To be used in tea or infusion, and recommended in affections of the Lungs and Kidneys; also in Asthma, Jaundice, Coughs, and as a purifier of the blood. Said to be good in Ulcerations of the Kidneys ; also in Lead Colic. Dose of the infusion : from a half to a teacupful, two or three times a day.

Gum Arabic — (*Acacia Arabica*). — Is the name of a small tree, growing in Arabia and other parts of Asia, from which the article known as Gum Arabic is obtained, and is to be found in all the drug stores. It exudes from the bark and limbs of the tree, is of a white or light yellow color, and soon hardens on exposure to the atmosphere. The best qualities of the gum are of a light or pale yellow color, hard and brittle, semi-transparent, and, as found in our drug stores, in small, irregular lumps. It dissolves readily in cold or warm water, but much quicker in warm, forming a mucilage, more or less thick, according to the quantity used.

Medical Properties and Uses.— Gum Arabic is a nutritious, innocent, and excellent demulcent ; valuable in all irritations and inflammations of Mucous Surfaces, Bowels, and Urinary passages. Also good in Coughs, Hoarseness, and affections of the Bronchial Tubes.

It is especially serviceable in irritating and inflammatory Diarrhea and Dysentery, and in Inflammation of the Bladder, Strangury, Gonorrhea, and Tenesmus. It is to be given in mucilage, and can be taken freely. Take 1 or 2 ounces of the gum, dissolve in 1 pint of Boiling Water, stir occasionally, and take at pleasure, cold. It will dissolve much quicker if powdered. The mucilage is often mixed with other medicines, especially with Cough Mixtures; and is often used in the manufacture of pills, to make the mass harden and stick together better.

Gum Guaiac — (*Guaiaci Resina*).— This is a gum resin, or concrete juice, obtained from a tree called *Guaiacum Officinale*, but more commonly, perhaps, *Lignum Vitæ*, which grows in the West Indies, especially in Hayti and Jamaica. It is found in the drug stores, in hard, black or dark greenish lumps, or large cakes; is brittle, easily pulverized, and readily dissolved in Alcohol or Spirits.

Medical Properties and Uses.— Guaiac is a stimulant, alterative, and diuretic, and a great Rheumatic remedy. It is also valuable in Cholera, in combination with other articles. It is a hot stimulant, something like Cayenne; opens the pores, increases the flow of urine, and warms up the system generally. It is usually taken in tincture, in doses of one to three or four tea-spoonfuls, two or three times a day. A very good way to use it for Rheumatism, is in the form of bitters — that is, say 1 ounce of the gum, powdered, put into 1 quart of good, old Rye Whisky, and taken in ordinary-sized doses, three or four times a day. By adding 1 ounce, each, of Poke Root and Black Cohosh or Rattle Root, you have one of the best articles there is for constitutional or general Rheumatism, or chronic Rheumatic condition of the system. The dose of the powder is from five to twenty grains.

Gum Myrrh — (*Balsamadendron Myrrha*).—This is a resinous gum, brought from the East Indies, and is obtained from a small, shrubby tree, growing in the countries about the Red sea. It is of a reddish yellow color, hard and somewhat brittle, of a slightly bitter taste, and of a strong, rich, agreeable balsamic odor.

Medical Properties and Uses.— It is a tonic, emmenagogue, and powerful anti-septic, as well as somewhat stimulant and expectorant. It is valuable in Putrid and Malignant Fevers and Conditions of the system, and in all cases where there is a tendency to Mortification. It is also a valuable tonic emmenagogue, or for stoppage of the Menses, especially in what is called Chlorosis or Green Sickness — a disease which afflicts young females, on account of the stoppage or imperfect development of the Menses, or Courses. In such cases, it is generally combined with other articles, as Aloes and Carbonate of Iron, or

Muriated Tincture of Iron; but it is good alone. Generally given in tincture, which is made by putting from 2 to 4 ounces of the gum, powdered, into 1 quart of good Spirits. Dose: from one to three tea-spoonfuls, three times a day. Dose of the powder: ten to twenty grains. Gum Myrrh constitutes the main ingredient in the celebrated Number Six. It is also often used as a component part of Ague pills. It is highly valuable as a local application in all spongy and gangrenous conditions of the flesh, in Bleeding Gums, Aphthous Sore Mouth Gangrenous Ulcers, and in Wounds and Injuries where there is danger of Mortification — as a wash, or mixed in a poultice. Tincture of Myrrh and Aloes is one of the best applications in the world for fresh Cuts and Wounds, to make them heal.

Hemlock — (*Pinus Canadensis*). — This is a large tree, growing in some of the most Northern States and the Canadas, the bark of which is extensively used for Tanning. It is a species of Pine.

Hemlock Gum, or Canada Pitch. — There is a sort of pitch, or gummy juice, that exudes from this tree, which is gathered, purified by boiling, and is sold for medicinal purposes. It is hard, brittle, of a dark brown color, and easily softens by heat.

Medical Properties and Uses. — This gum is mostly used for plasters; melted with a small portion of Gum Turpentine and a little pulverized Gum Myrrh, stirred in before cooling, it makes an excellent strengthening plaster for Weak Backs. It is no better, however, than Burgundy Pitch, if so good, and used for the same purposes.

Oil Hemlock. — This is a valuable essential or volatile Oil, obtained by distilling the gum. It is in appearance about like Spirits of Turpentine, and is useful as an external application in Rheumatism, Croup, and in all cases requiring a stimulating lotion. Combined with other oils and liquids, it forms an excellent Liniment for all ordinary uses; in Croup, Quinsy, and Sore Throat, it is an excellent external application. It may also be taken internally, the same as Turpentine, from ten to thirty drops, on a little Sugar. A strong decoction of the Hemlock Bark is a valuable injection in Chronic Leucorrhea, and for Falling of the Womb; and is often used internally as a remedy for Diarrhea.

Hoarhound — (*Marrubium Vulgare*). — This plant is so common in this country, and known so generally, that a description is unnecessary.

Medical Properties and Uses. — Hoarhound is tonic, expectorant, and diuretic. Used mostly in the form of syrup, for Colds, Coughs, and Affections of the Lungs and Air Passages. It is also good in warm tea or infusion, sweetened either with Sugar or Honey, both for Lung Affections, and to produce Sweating in case of Colds and Influenzas. It is also a valuable medicine for females, in case of Sup

pressed Menses, Painful Menstruation, and Hysteria. The infusion used cold is a good remedy for Dyspepsia — combined with as much Boneset Leaves, still better. Hoarhound forms a part of most of the syrups and compounds for "Coughs, Colds, and Consumption," and is a useful herb. May be used freely in infusion or syrup.

Hollyhock — (*Alcea Rosea*). — This is the common Hollyhock, a gay, showy plant, growing from four to six feet high, having beautiful, large red, purplish, or pink-colored flowers, and often cultivated in gardens, and about houses and yards.

Medical Properties and Uses. — The flowers and roots are used, and are demulcent, mucilaginous, and diuretic. The flowers are also somewhat astringent, and a tea made of them and Rose leaves is considered good in Fluor Albus, or the Whites, to be drank freely. The fresh Hollyhock Flowers bruised in an iron mortar, a quantity of White Sugar added, and a little powdered Lobelia Seed, Cloves, Cayenne, Anise Seed, and pulverized Slippery Elm Bark, the whole mixed well together, making a thick paste, is one of the finest conserves in the world for Coughs and the like, to be eaten at pleasure, the same as Cough Candy. A decoction of the Hollyhock Root is an excellent demulcent diuretic, to be used freely in all cases of Inflammation of the Urinary Organs, and is very similar to the Marsh-mallow Root.

Hops — (*Humulus Lupulus*). — The Hop plant, or vine, is well known, being more or less cultivated in all parts of the country.

Medical Properties and Uses.—Hops are tonic, sedative, and nervine, and when applied externally, exert a very soothing influence. They are often used as a fomentation; that is, boiled in Water and Vinegar, either alone or with other Bitter Herbs, and applied as warm as can be borne to the stomach, abdomen, or other parts of the body, to relieve Internal Pain and Inflammation, and are extremely good for such purposes. A pillow stuffed with Hops, it is said, will induce sleep, when other things fail. The Tincture of Hops, or of Lupuline (which is the fine yellow, granular powder, contained within the leaves or scales of the Hop-heads), is an excellent anodyne, preferable to Opium in many cases, and is said to be extremely valuable to relieve After-pains, in Childbirth; and in Wakefulness, Nervous Inquietude, Anxiety, Delirium Tremens, and the like, because it may be taken freely without injuring the stomach, or producing Constipation of the Bowels. A strong tea or infusion might be used instead of the tincture. The tincture of Hops (or Lupuline) may be given in doses of two to four or five tea-spoonfuls, and the tea in ordinary quantities.

Horsemint — (*Monarda Punctata*). — This is a well known and very grateful smelling herb, common all over the country, growing

usually from one to three feet high, in rich, dry soils, along fences, and in the woods and prairies of the West.

Medical Properties and Uses.—The leaves and blossoms are used, and are an excellent diuretic; also diaphoretic, carminative, and anti-emetic. An infusion or strong tea of the herb is extremely valuable in Suppression or Retention of the Urine, Gravel, Affections of the Kidneys, and is good also to allay Nausea and Vomiting. It is also good as a diaphoretic and emmenagogue in painful Menstruation. It may be used freely, and should be taken warm. There is an essential Oil made by distilling the herb, which can be had at the drug stores, and which may be used for the same purposes as the infusion, in doses of ten to thirty drops. It is good applied externally over the region of the Kidneys, in affections of those organs.

Hyoscyamus — (*Hyoscyamus Niger*).—Called also Black Henbane. This plant is a native of Europe, but is found growing now in many parts of the Northern States, but is not generally known nor easily described. It is generally used in the form of extract, which can always be had at a drug store.

Medical Properties and Uses.—It is one of the narcotic poisons, and when used at all must be used with caution. In proper doses, it is anodyne and anti-spasmodic, and is given to relieve pain, to quiet nervous excitement, induce sleep, overcome spasms, and the like, being preferable to Opium in cases where you wish to avoid constipating the bowels, as it has rather a laxative effect than otherwise. It generally agrees with the stomach better than Opium. It is applicable in Neuralgia, Rheumatism, Nervous Coughs of long standing, Spasmodic Affections, and irritable and inflamed conditions of the Urinary Organs. Dose: of the powdered leaves, five to ten grains; of the tincture, from thirty to sixty drops, or a tea-spoonful; of the alcoholic extract, from one to three grains, which may be increased gradually up to ten grains.

Hyssop — (*Hyssopus Officinalis*). — This is a common and well known herb, cultivated in most of our gardens. It has an agreeable fragrant smell, and warm, pungent, and slightly bitter taste. The leaves and tops are the parts used.

Medical Properties and Uses. — It is a mild stimulant, tonic and carminative. Used as a domestic remedy for Colds and Sore Throat, in the form of warm tea. It is an excellent remedy in Quinsy as a gargle, combined with as much Sage, and a little Alum dissolved in it and sweetened with Honey. The fresh leaves, bruised, are good applied to fresh Wounds, to relieve pain and remove the discoloration.

Iceland Moss — (*Cetraria Islandica*).—This is a small plant, only growing one or two inches high—a sort of Moss, of a grayish or light

brown color — a native of Iceland, and some of the more Northern countries of Europe. It may also be found in our drug stores.

Medical Properties and Uses. — It is a tonic demulcent, and also nutritious. As a demulcent and soothing remedy, it is given in Coughs, Bronchial Affections, and Consumption; and in low and exhausted conditions of the system, it is valuable also as a nutriment. It is good in Dyspepsia, on account of its tonic properties. In Affections of the Lungs, an equal portion of the Liverwort combined with it renders it still better. The way to use it is in mucilage, which is made by covering a handful of the Moss with from 1 pint to 1 quart of Boiling Water; let stand two or three hours; then strain, and sweeten with Honey or Molasses, adding a little Lemon Juice, if you like, and a bit of the Lemon Peel — to be used freely, at pleasure. Boiled in Sweet Milk, it is still better as a nutriment and tonic, especially in low stages of Consumption and other debilitated conditions; also for children.

Ice Plant — (*Monotropa Uniflora*). — This is a most singular plant, and not very often met with, though it is said to grow throughout most of the Western and Middle States, as well as the Eastern. It has a small, clear white stem, from three to eight inches high, with a few pure white, semi-transparent leaves at the top, and a large white flower. It grows in rich shady soils, about old rotten logs, and the roots of old trees. The whole plant is a pure white, and so tender and succulent, that if handled and rubbed a little, it will melt or soften, almost like ice. The root is the part used as medicine, and should be gathered in September, and after being dried, should be kept in tight bottles, or it will lose its strength.

Medical Properties and Uses.—It is nervine, anti-spasmodic, and sedative. It has been considered a great remedy for Epileptic Fits, especially in children, for which purpose it should be given in powder in doses of half to a tea-spoonful, twice a day, according to age, in a little Pennyroyal or other Herb Tea. It is considered a good sedative and diaphoretic in Intermittent Fevers, and very valuable in Nervous Restlessness, Pains, and Irritability, instead of Opium. It has been used with great success in cases of Convulsions, Spasms, Fits, and St. Vitus' Dance; and hence among its common names are Fit Plant, and Convulsion Root. It is, no doubt, a valuable plant, but too scarce to be of much general utility. The dose is from half to a tea-spoonful of the powder, two or three times a day.

Indian Arrow, or Wahoo—(*Euonymus Atropurpureus*).—Known also as White Dogwood, Bitter Ash and Burning Bush. It is a large shrub or bush, from ten to fifteen feet in hight, and usually from two to three inches in diameter, with a smooth, light-grayish bark, which

is very thickly interspersed with irregular white spots. There are numerous branches toward the top, generally going off at right angles; the younger branches being of a dark green color, and quite tender. The flowers are small, dark reddish-brown inside, and greenish outside — followed by an angular-shaped husk, which opens in the fall, exposing a bright, fiery red berry or fruit, giving to the whole top of the bush a brilliant red appearance. The wood is firm, compact, and rather soft, and of a clear white color. The root, or rather bark of the root, is the part used. Grows in rich, moist woodlands, and bottoms.

Medical Properties and Uses.— Wahoo is a valuable laxative tonic and alterative; and also diuretic and expectorant. May be used in infusion, extract, syrup, or as bitters, and is an excellent restorative in Intermittent and Bilious Fevers, Ague, Dyspepsia, and weak, debilitated conditions of the system. Also in torpid conditions of the Liver, Constipation of the Bowels, Dropsy, and Lung affections. Dose: of the tincture, two to four tea-spoonfuls, three times a day; of the powder, twenty to thirty grains; and in bitters, to be used at pleasure, in ordinary doses.

Indian Cup Plant — (*Silphium Perfoliatum*). — Called also Ragged Cup. This plant is found growing throughout the Western States, usually in rich open bottom lands, having a large, smooth, square stalk, from three to six feet high. The leaves are large, being from eight to twelve inches long, and four to six wide, growing in pairs, and in such a shape as to form a sort of cup — hence the name. The flowers are yellow, growing around a dark colored disk, something like a small Sunflower. Indeed, this plant is sometimes called Wild Sunflower — especially that species which is found growing all over the Western prairies (the *Silphium Gummiferum*, or Rosin Weed). The root is the part used as medicine; is large, rough and crooked, and has an acrid, strong resinous, bitter taste and smell. The stalk of the Sunflower species, or that common to the prairies, on being cut or broken, exudes a sort of resinous gum, of a light amber color, and fragrant bitter taste, which is often gathered and chewed, the same as Burgundy Pitch or Beeswax.

Medical Properties and Uses. — The root is tonic, diuretic, and alterative. It is used by many as an excellent remedy in Intermittent Fevers, to be used in decoction or strong infusion. It is also esteemed a good remedy for Internal Bruises, for Liver Complaint, and as a general alterative and restorative; and, taken freely in strong infusion, is said to be a specific for the cure of Ague Cake, or Enlarged Spleen. Both species of the Silphium are about the same in their medicinal properties. The dose of the decoction is from one to two

wine-glassfuls, two or three times a day. Used also in the form of bitters.

Indian Hemp — (*Apocynum Cannabinum*). — This is one of several species of plants called Indian Hemp. It resembles very much the *Apocynum Androsæmifolium*, or Bitter Root, but with proper care may easily be distinguished. They both grow in the same kinds of soil, often together, and both have a tough bark, like Hemp, and pods somewhat alike; but may be distinguished by their leaves and flowers. The leaves of this species are oblong and sharp, or pointed, at both ends, and of a whitish, downy appearance on the lower side; while those of the Bitter Root are pointed only at the outer end, and quite round or blunt at the end next the stalk — are not so long as the other, and are dark, smooth, green on both sides. In this species the flowers are greenish-yellow, slightly pink or purple inside, while those of the Bitter Root are white, tinged with red. The whole plant, when green, is also filled with a milky juice, the same as the Bitter Root. Grows throughout the United States, in low moist lands and meadows, generally about two feet high. The root is the part used.

Medical Properties and Uses. —It is diuretic, cathartic, emetic, and diaphoretic. The powdered root very much resembles Ipecacuanha in appearance, and also in its action as an emetic — hence it is sometimes called American Ipecac. It is seldom, however, used as an emetic, but mostly for its diuretic and cathartic effects, in Dropsies, in which it is a most admirable remedy. It acts as a hydragogue cathartic, producing copious watery stools, and also greatly increases the secretion of the Kidneys, and a flow of Urine. The best way to use it for these purposes, is in the form of decoction. 1 ounce of the powdered or bruised (dry) root may be steeped for an hour or two in 1 pint of Water, and the patient take of the decoction from two to four table-spoonfuls three or four times a day. It is also used in extract, the dose of which is from three to six grains, once or twice a day. In Dropsy, it is to be continued for several days at a time.

Indian Turnip — (*Arum Triphyllum*). — Called also Wake Robin. This root grows all over the United States, in woods and low moist soils; indeed, all soils and regions appear suited to this plant, yet rich and shady grounds appear to suit it best. The Indian Turnip is so well known by the people in the country, that a description is unnecessary.

Medical Properties and Uses. — It makes an excellent poultice in Scrofulous Swellings; when dried and pulverized, and mixed with Honey or Syrup, is a good remedy in Coughs, Canker, Pain in the Breast; and given in tea-spoonful doses, of the powder, is a valuable remedy in Colic. It is said to be very valuable in cases of low Typhus

Fever. An ointment made of the fresh root and Lard, is useful, I have been informed, in Scald-head. The ordinary dose of the powder is ten to twenty grains, two or three times a day; but I have generally found the powder or dry root to be nearly or quite inert, and good for nothing. It should be made into syrup, for Colds, Coughs, and the like, while fresh, by macerating in a little Vinegar, and then mixed with Honey or Molasses. Other articles may be added.

Ipecacuanha. — Commonly called Ipecac. It is a small shrubby plant, indigenous to Brazil and other parts of South America, growing usually in rich, moist, shady soils. The root is the part used, and may always be found in our drug stores, either in fine powder or in the crude root.

MEDICAL PROPERTIES AND USES. — In large doses, that is, thirty to forty grains, it is emetic; in small doses, of three or four grains, repeated every hour or two, it is diaphoretic and expectorant; and again, in still smaller doses, said to be tonic. It is one of the best and safest emetics we have. From ½ to 1 tea-spoonful in ½ pint of Hot Water, taken two or three times, within ten to twenty minutes, is a good, thorough and easy emetic: it is believed to be better, however, combined with as much or double as much powdered Lobelia Seed or Herb, or equal parts Lobelia and Blood Root, as an emetic; but either alone or with the others, is always safe, mild, and yet efficient. In Fevers and Inflammatory diseases, Ipecac, given in diaphoretic or small doses — from one to three grains — is of great service. In Inflammation of the Bowels, Stomach — indeed any of the internal organs — it will be found an excellent agent, given in small doses on account of its sedative and diaphoretic effects. In still smaller doses — from ½ to 1 grain, two or three times a day — it is said to be good in Dyspepsia, acting as a tonic, increasing the appetite and improving the digestion. I have found minute doses, of half a grain or less, very efficient in checking Vomiting, given at intervals of an hour; and in Dysentery or Bloody Flux, a powder composed of 1 grain, each, of Ipecac and Leptandrin, ½ grain of Podophyllin and ⅙ grain of Morphine, given every four to six hours, will be found an admirable remedy. After three or four of these powders have been given, the Podophyllin should be left out, and the others continued. The Wine of Ipecac, or the tincture, which can always be had at the drug stores, is an excellent ingredient in Cough Mixtures, along with such articles as tinctured Lobelia, Blood Root, and Black Cohosh, equal parts, and given in tea-spoonful doses, at short intervals.

Iron Weed — (*Vernonia Fasciculata*). — This is a common and well known weed, growing plentifully throughout the Western States, in low, rich woodlands and prairies, generally around the edges of ponds,

creeks, and wet lands. It has a straight stalk, from three to six or eight feet high, of a dark purple color, coarse leaves, and beautiful, bright purple flowers on the top, remaining late in the fall.

Medical Properties and Uses.— The root is a bitter tonic, alterative and deobstruent, particularly useful in Female Complaints, such as Suppressed Menses, Painful Menstruation, and Leucorrhea or Whites. It is also said to be a certain remedy for the Chills, and Intermittent and Bilious Fevers. As an alterative, it is considered highly valuable in Scrofula, Diseases of the Skin, and in constitutional Syphilis. It is to be used in decoction or tincture; and may be used in Syrup, along with other alteratives — especially for the last named diseases. Dose: of the decoction, half a wine-glass or more; of the tincture, two or three tea-spoonfuls, several times a day. A decoction of the leaves is said to be a good gargle in Sore Throat. The root is often added along with other roots and barks to Domestic Beers, in some parts of the country, for its medicinal qualities.

Iron Wood — (*Ostrya Virginica*).— This is a small tree or sapling common in most of the States, growing usually from twenty-five to forty feet high, having a fine dark, grayish bark, and very hard, white wood. The young trees are often used for ox-goads and fishing-poles. It grows usually on the bluffs and hills, along small streams.

Medical Properties and Uses.— The heart of the tree, or central part of the wood — which is of a dark grayish or reddish color — is the portion used. It is said to be a powerful anti-periodic tonic and alterative, and by some regarded as an infallible remedy for the Ague and Intermittent Fever. Also said to be good in Scrofula and Dyspepsia. It is used in strong decoction, made by boiling for a good while a portion of the heart of the tree, cut into chips or small pieces. Dose: about half a teacupful, three times a day. I presume that a valuable extract might be made by boiling down a quantity and evaporating to the proper consistency, to be used in the form of pills, for Ague and Periodical Fevers.

Jalap — (*Ipomœa Jalapa*). — Jalap will generally be found in the drug stores in the form of a fine powder. It is the powdered root of a plant, or rather sort of vine, which grows wild in Mexico, principally in the State of Vera Cruz, and near the town of Xalapa, from which it takes its name.

Medical Properties and Uses.— Jalap is an active, brisk cathartic, and somewhat drastic, producing copious watery discharges from the Bowels. It is, if taken alone, apt to gripe, and sometimes produce nausea and vomiting. Its tendency to gripe and to sicken the stomach, can always be overcome by adding to the dose three or four grains of pulverized Cloves; or a little Cayenne or Camphor will do.

It is used mostly as a hydragogue cathartic, in Dropsical conditions, and in Fevers where it is desired to lessen the quantity of the circulating fluid. Dose: of the powder, as a cathartic, from twenty to thirty grains; of the tincture, from two to four tea-spoonfuls. Where the full hydragogue effect is desired, add a heaping tea-spoonful of Cream of Tartar to the dose. Jalap is not so much used now as formerly, the May Apple Root, which is very similar in its action, and probably better, and its concentrated extract, the Podophyllin, having nearly superseded it.

Jerusalem Oak—(*Chenopodium Anthelminticum*).—This plant grows from one to three feet high, and is found wild in nearly all parts of the United States, in waste places, about old buildings, and along roadsides. It is also known as Worm Seed, and is sometimes cultivated in gardens, as a remedy for Worms. It flowers during July and August, and bears an immense number of little greenish brown seeds, the part used as medicine, which should be gathered when ripe, during the fall. The whole plant, especially the seeds, has a strong, sweetish, and rather disagreeable smell and taste, owing to the presence of a volatile oil which it contains, and which exists in great abundance in the seeds. This oil may be had in the drug stores, known as Worm Seed Oil, or Oil of Chenopodium.

Medical Properties and Uses.—This is a valuable, very certain, and always safe anthelmintic, or Worm Medicine. It is also antispasmodic. Valuable in all cases of Worms. The seeds are to be pulverized and mixed with Honey or Molasses, until the mixture becomes a thick electuary; then given to children in tea-spoonful doses, night and morning, for a few days, to be followed by a dose of Castor Oil, or other Cathartic. The Oil, however, is mostly used now, being equally as good, and much more convenient; the dose of which is from three or four to ten drops, on a little Sugar or in Syrup, Mucilage, or Milk, to be given night and morning for three or four days, and then, as in the other case, to be followed by a brisk purgative. A very good Vermifuge may be made by adding 1 dram (or tea-spoonful), each, of the Worm Seed Oil and Spirits Turpentine to 1 ounce (or 8 tea-spoonfuls) of Castor Oil. Dose: a tea-spoonful, three or four times a day—always shaking well. This is equal to the best, and will operate sufficiently on the bowels.

Jessamine—(*Gelseminum Sempervirens.*)—This is the Yellow Jessamine, growing abundantly in many of the Southern States, and known also by the names of Woodbine and Wild Jessamine. It is a climbing vine, growing very luxuriantly, climbing upon fences, hedges, bushes, and whatever is in reach, and forming an agreeable shade, and, when in bloom, filling the atmosphere around with an

agreeable, rich perfume. It grows wild, but is extensively cultivated in the gardens, for its beauty, fragrance, and the shade it affords. Blossoms yellow, and appear during the early spring months.

Medical Properties and Uses.—The root is the part used, and then in the form of tincture. It is considered a most valuable Febrifuge, that is, Anti-fever remedy; and one of the most powerful relaxing and anti-spasmodic medicines known. Many physicians consider it the most valuable and certain remedy ever yet discovered to subdue and break up a Fever, no matter what kind of fever it is, whether Bilious, Continued, Intermittent, Typhoid, or any other; which it generally will do in from six to twenty-four hours; equalizing the circulation, producing perspiration, and allaying nervous excitement, seeming, indeed, to regulate the operations of the whole system, and a healthy action of all the secretions—without producing either sickness of the stomach or purging, or any injurious effects whatever—unless, indeed, it should be given in too large doses, when it is liable to produce too great relaxation. It may be given at any stage of the disease, and along with or after any other treatment. Its usual effects are general relaxation, even to complete prostration sometimes, double-sightedness, and perhaps inability to open the eyes for a time; but these effects will soon pass off, leaving the patient refreshed, free from fever or pain. The dose of the tincture is from ten to thirty drops, and even as high as fifty drops, or a tea-spoonful, have been given at once in high grades of Fever, and to be repeated every two hours till the proper effect is noticed—that is, relaxation, double vision, and falling of the eyelids, and perspiration—when it is to be discontinued. It may be given in a little Water or Herb Tea; and always, in case of Fever, from 3 to 10 grains of Quinine are to be combined with the first two or three doses. This is especially necessary in all cases of Remittent or Intermittent Fever, otherwise it will return again. Two or three doses are generally all that will be required, if moderately large. The Gelseminum Tincture is principally used in Fevers, but has been found efficacious in Nervous Headache, Pneumonia, Leucorrhea, St. Vitus' Dance, Toothache, and in all forms of Neuralgia or Nervous Excitement and Irritability, and Tetanus, or Lockjaw. In this latter affection, as well as in all cases of Spasm or Muscular Contraction, it may be relied on as infallible, if given to complete prostration. Care must be taken, however, not to carry it too far, or give too much, or continue it too long, as danger, in such case, might occur. In case of too great prostration, stimulants, such as Brandy, Number Six, and the like, should be freely given. The tincture can generally be had in all the drug stores.

Juniper Berries—(*Juniperus Communis*).—These are the berries of an evergreen shrub, or bush, native of Europe, though found growing in some parts of this country. The berries, when dried, are black, somewhat shrivèled, and about the size of a small Pea. May be found in all the drug stores.

Medical Properties and Uses.—Both the berries and the oil, which is obtained from the berries, are used, and are diuretic, carminative, and moderately stimulant. The berries are mostly used along with other articles, in the form of infusion, or bitters, to render them more diuretic, or to modify the action of more powerful diuretics. As a diuretic, the Oil is mostly used, and is considered valuable in Dropsy; also in Affections of the Bladder, as well as some other affections, such as Scurvy, Skin Diseases, and, in combination with Oils Copaiba and Cubebs, in Gonorrhea, Leucorrhea, and the like. Dose: of the oil, from three to six drops, in Mucilage, Spirits, or Mint Tea.

Kino.—This is a dark red, brittle gum, obtained from a large tree which grows in Hindostan, called the *Pterocarpus Marsupium*. Gum Kino may be found in all the drug stores.

Medical Properties and Uses.—It is a pure and very powerful astringent, fully as good in most cases as the Catechu, perhaps in some respects better, and may be used in all cases where a pure astringent is wanted. It is useful in Diarrhea, Dysentery, in Hemorrhage from the Womb, and in Leucorrhea; also good as an injection in Leucorrhea, and as a gargle in Sore Throat and Mouth. It is mostly used in the form of tincture, or dissolved with other preparations for Diarrhea and Looseness of the Bowels. It is a pure and innocent astringent, and may be combined with any preparation for Bowel Complaints. Dose: of the powder, from ten to thirty grains; of the tincture, from one to two tea-spoonfuls.

Lady's Slipper—(*Cypripedium Pubescens*).—Known also by the names of American Valerian, Nervine, Moccasin Flower, Umbel, etc. There are two or three varieties of it, perhaps more, all of which possess about the same medical properties; the two varieties, however, the one having yellow flowers, and the other white and pink, or red, are mostly used. The Lady Slipper grows in most of the States, in rich, sandy soil, generally on the sides of hills and bluffs, along streams, and in rich, shady woods. It rises to the hight of one to two feet, leaves three to four inches long, and two to three wide, are alternate, and attached by a sort of sheath around the stalk. The flowers are large, showy, and somewhat in the shape of a moccasin—either of a pale yellow, or white, with red or purple spots. The roots are bunchy, fibrous, crooked, and about as thick as a wheat straw. The root is the part used.

Medical Properties and Uses. — It is nervine, anti-spasmodic, and somewhat tonic and diaphoretic. It is useful in all cases of Nervous Irritability, Headache, Hysteria, Chorea, Restlessness, and wherever a mild and safe Nervine is needed. It is often combined with the Skull-cap (*Scutellaria*) in severe Nervous Affections, the compound being more powerfully nervine and anti-spasmodic. Lady's Slipper Root is very generally used in the form of infusion; but is also used in extract and tincture. Dose: of the alcoholic extract, from five to ten grains; of the tincture, from two to four tea-spoonfuls; of the powder, about one tea-spoonful, in a little Herb Tea or Warm Water. The infusion is made by steeping about 1 ounce of the powdered root in 1 pint of Boiling Water. Dose: from a half to a teacupful, every hour or two, or oftener, according to symptoms. It is an excellent substitute for the foreign or European Valerian, and, in most respects, fully equal to it. It can always be found at the drug stores.

Larkspur — (*Delphinium Consolida*).— Is a native of Europe, but is found growing wild in this country, and is also cultivated in our gardens as an ornament. This plant grows from one to two feet high, having purple or bright blue flowers, which appear in June and July, and is very generally known by the common name of Larkspur. The flowers, leaves and seeds are used as medicine.

Medical Properties and Uses. — They are diuretic, emmenagogue, anthelmintic, and anti-emetic. The virtues of this plant are not very well known as yet. A tincture of the Seeds has been used with considerable success in Gravelly Affections, and as a Worm Medicine; also in fits of Asthma, and in Dropsy. The tincture is made by digesting, for a few days, 1 ounce of the powdered Seed in ½ pint of Spirits, or diluted Alcohol. Dose: ten drops, three times a day, gradually increased up to twenty drops. A small bunch of the flowers, or about ½ ounce of leaves and flowers, steeped in 1 pint of Boiling Water, and given in half teacupful doses, at short intervals, or every half hour, is said to be an admirable remedy for Cholera Morbus, and in all cases of Vomiting or Vomiting and Purging, checking the Vomiting, allaying Nausea, and producing a calm and delightful Relief. A tincture of the Seeds, applied to the head, is said to be death on Lice.

Laurel — (*Kalmia Latifolia*).— This is a shrub, or bush, growing on rocky hills, mountain sides; and in damp soils, rising from four to eight feet, or higher, and often forming dense thickets, difficult to get through, and bearing beautiful red or rose-colored flowers. It is most generally known by the name of Laurel, or Mountain Laurel; but is also known in some places by the names of Sheep's Laurel, Lambkill, Big-leaved Ivy, Spoon Wood, and Calico Bush. It is also known as Poison Laurel, being, indeed, a narcotic poison, often killing sheep

and other animals that eat the leaves, and when used as a medicine of course, must be used with caution. The leaves are the part used.

MEDICAL PROPERTIES AND USES.—In large or over-doses, like most of the vegetable narcotics, it produces Headache, Vertigo, Loss of Sight, Depressed Action of the Heart, General Weakness, Cold Extremities, and the like. In medicinal doses, it is a powerful sedative and valuable alterative; is used mainly as an alterative in Syphilis, and as a sedative in Enlargement and Over-action of the Heart, and in Inflammatory diseases. It has also been found very useful in Hemorrhages, and in Dysentery. As a remedy in that wretched disease, Syphilis, it is regarded by some as among the best and most efficient. It must, however, in all cases be used with prudence and caution, and should any of its dangerous symptoms appear, must be at once discontinued, or the dose lessened. It is generally used in the form of a strong or saturated tincture, which may be made by bruising the leaves, if fresh, or, if dry, crumbling them up, and covering them with dilute Alcohol or good Spirits, and let stand one or two weeks. The dose will then be ten to twenty drops, three or four times a day, beginning with ten, and increasing a drop or two each day, up to twenty; and carefully watching all the symptoms. This is in case of Syphilis, Disease of the Heart, and where it is necessary to continue the medicine for some days. The decoction may be given in one or two table-spoonful doses, every two or three hours, in acute diseases. The dose of the powdered leaves would be from ten to twenty grains. The leaves, stewed in Lard, make an excellent Ointment for Scald-head, and that tormenting complaint, the Itch.

Life Root—(*Senecio Gracilis*).—Known also by the names of Female Regulator and Squaw Weed. This is rather a scarce herb, and not very generally known. It is to be found most commonly along streams and creeks, on rocky banks and bluffs, and grows from one to two feet high. It is difficult to describe, so as to be recognized. But it can generally be had at any Botanic drug store. The herb and root are both used.

MEDICAL PROPERTIES AND USES.—This herb seems to have a special and very favorable influence upon the female organs of Generation, so much so that it has acquired the name of "Female Regulator." In its sensible action, it is diuretic, tonic, diaphoretic, and pectoral; but is mainly used and most useful for its action upon the Uterus. In all cases of Obstructed or Suppressed Menses, it is highly valuable, either alone, or in combination with the Wild Ginger, or Vervain Root, to be taken in tea or infusion. In cases of painful or too profuse Menstruation, and in Flooding from the Womb, or Menorrhagia, combined with the Cinnamon Bark and Raspberry Leaves, it is also extremely

valuable, taken freely in infusion. As a diuretic, it has been used with great success in Strangury and Gravel, in combination with other diuretics; and in Affections of the Lungs, especially in females, and dependent more or less upon derangement of the Menstrual process, it is an excellent remedy. In the treatment of all Female Diseases, the *Senecio Gracilis* is regarded, by those who have tested it, as one of the best remedies known. Dose: of the infusion or decoction, from a half to a teacupful, three or four times a day.

Liquorice — (*Glycyrrhiza*). — The Liquorice plant is a native of Southern Europe and Asia. The root is the part used in medicine, and can generally be found in the drug stores — either the root or the extract, which is just as good, and in many cases better. It is of a peculiar, rather pleasant, sweetish, demulcent taste, and generally liked by children.

Medical Properties and Uses. — Liquorice is a demulcent expectorant, and very much used in Coughs, and Affections of the Lungs, Bronchial tubes, as well as in cases of Mucous Irritation of the Bowels and Urinary Organs. It is most usually given in combination with other medicines, as it serves to give them a sweet and agreeable taste, as well as to aid in their medicinal action. A decoction of the root may be made, and used either alone or with other medicines; or the extract may be dissolved in Warm Water, which amounts to the same thing. The extract is very good, used as a Cough Candy, to allay Coughs and Mucous Irritation of the Lungs. It can be used freely.

Liverwort — (*Hepatica Triloba*). — Sometimes called Liverleaf and Trefoil. This is a small plant, having a sort of three-lobed leaf on each stem, the stems rising only six or eight inches high, and is common in most of the States, growing in woods, and usually upon the sides of hills and bluffs — generally the south side. It blossoms very early in spring, either in March or April, the flowers being of a purplish white color. The whole plant is used as medicine.

Medical Properties and Uses. — It is tonic, demulcent, expectorant, and slightly astringent, and is used in the form of infusion or in syrup, in Affections of the Lungs, Incipient Consumption, Liver Complaint, Bleeding at the Lungs, Coughs, and the like. It has acquired some reputation in Lung Affections, used in combination with Tar, in the form of a Syrup, known as "Dr. Rogers' Liverwort and Tar." It is an innocent herb, and may be taken freely in infusion.

Lobelia — (*Lobelia Inflata*). — Called also Indian Tobacco, Wild Tobacco, Emetic Weed, Colic Weed, Eye Bright, etc. This plant is common throughout our country; it grows one or two feet high; the stem is hairy; the leaves are tapering, hairy above and below, bordered with small irregular teeth; the flowers are palish blue, thinly scattered

along the branches and upper part of the stem, and continue to bloom from July till late in autumn. The blossoms are followed by small pods or bole vessels — something like the shape of an egg — which contain a large quantity of very small black seeds ; when you break the plant, a milky juice comes out. This is the plant so much used by Botanical Doctors, called Thomsonians, supposed to have been discovered by Samuel Thomson, whose followers employ it for almost every disease as a vomit ; but this indiscriminate use of the plant is wrong. Late discoveries in Europe, by some of the most distinguished physicians, prove, beyond doubt, that it is one of the most valuable of all our medical plants, when properly used. It was discovered long before Thomson, by Lobel, a noted Botanist, and named after him, although Thomson deserves much credit for bringing it into general use. The facts are these: The Penobscot tribe of Indians, from traditionary evidence, used it in the form of a tea, to produce vomiting, and as their unfailing remedy in Colic, hence the name of Colic Weed. The New England people obtained this information from the Indians, and used it in various complaints, but particularly in Colic, and considered it perfectly safe and harmless. I have traced it back to the year 1772, and with the exception of the Penobscots, I find the American aborigines had no knowledge of its properties or virtues. I have thus minutely described this plant because the medical men have, for the last fifteen or twenty years, prejudiced the public mind against the use of it, by saying it was a poison. Like every thing else, raise the cry of mad dog, and every one heaves a stone. Medical men, however, are becoming fully satisfied that they have not given this valuable plant a sufficient trial, so as to prove its virtues. I see, however, that in the last edition of the *United States Dispensatory*, they have prudently omitted the word "poisonous." The truth is, that testimony is decidedly in its favor from some of the most distinguished physicians, who bear witness to its great value in Spasmodic Asthma, Croup, and other complaints, who have given it a fair trial, without prejudice, in all the London Hospitals. The following physicians have pronounced it, in their lectures, to be the most efficacious remedy for Asthma that has yet been employed : Dr. Elliotson, Dr. Sigmond, Dr. Kinglake, and many others. In the *Gazette of Health*, the *London Lancet*, and the *Medical and Surgical Journal*, will be found a series of important facts upon the great value of this plant. The Ethereal Tincture of Lobelia, which can be purchased at any drug store, relieves, almost instantaneously, the most violent Asthmatic paroxysms. The celebrated Dr. Drury gave it a trial during a most severe fit, in which the breathing was distressingly oppressive ; it instantly relieved him, and he has ever since remained comparatively free from

the complaint. Dr. Cutler, a distinguished physician in the United States, makes the following remarks: "It has been my misfortune to be an Asthmatic for about ten years. I have tried a great variety of remedies, with but little benefit. Last summer I had the severest attack I ever experienced, for eight weeks. The Tincture of Lobelia gave me immediate relief, and I have been entirely free from the complaint since that time. My breathing, at one time, became so difficult I thought I should suffocate. I took a table-spoonful of the Spirit Tincture, made of the fresh plant; in three or four minutes, my breathing was as free as it ever was, but I felt no sickness at the stomach. In ten minutes I took another spoonful, which occasioned sickness. After ten minutes, I took the third, which produced sensible effects on the coats of the stomach, and very little vomiting, with a kind of prickly sensation through the whole system." Dr. Eberle, a Professor of Medicine, in his *Materia Medica*, observes: "I have had several very striking examples of the good effects of Lobelia in Asthma. I have known the most frightful paroxysms completely allayed in less than fifteen minutes, even when the disease depended upon organic affections of the heart. As an emetic, I have employed it in several cases of the Croup with great benefit." Dr. Samuel Thompson says he cured a woman of the Asthma by Lobelia tinctured in good Spirits, who had not been able to lie in bed for six months. I do know that the Ethereal Tincture, or a tincture made of Lobelia and Ether, has, in my practice, acted like a charm in many cases of Asthma. There are two sorts of tincture in the drug stores — the one made with Spirits, the other with Ether.

Medical Properties and Uses.— Lobelia is emetic, relaxant, expectorant, anti-spasmodic and sedative. In small doses, it is nauseant, producing a sort of burning, prickling, disagreeable sensation in the throat; and if the doses are continued or sufficiently increased, produces relaxation of the muscular system, languid pulse, perspiration, and for a time oppressive prostration. In sufficient doses, say of twenty to thirty grains of the pulverized seeds or leaves, it is a prompt, safe, and very efficient emetic, followed usually by general relaxation of the system, and often more or less complete prostration; but always without danger, the patient often dropping into a sweet slumber, awaking shortly after greatly refreshed, and not unusually with a desire for something to eat! It is unquestionably the best, most efficient, and safest emetic known. In Acute Pleurisy, it is an admirable remedy. It should, in such case, be given in broken doses at first for awhile, till the system is gradually brought under its influence; then in sufficient doses to produce thorough vomiting and relaxation. It is best, at first, to combine with it some Cayenne. A

very good plan is to mix 2 parts Tincture Lobelia with 1 part Number Six (or Tincture Cayenne), and give in tea-spoonful doses, in a little warm Pennyroyal, Catnip or Sage Tea. This will soon relax the system, if given every ten or fifteen minutes, equalize the circulation of the blood, and soon relieve the worst case of Pleurisy. In Snake-bite, Lobelia is regarded by many as a sovereign remedy — given in tincture, in small doses, just sufficient to keep the patient sick at the stomach, near the point of vomiting, and to be continued for several days, or till the danger is over; at the same time the wound is to be kept bathed with the tincture, or a portion of the herb, bruised and moistened, applied to it. It is also a valuable agent in the treatment of Hydrophobia — several cases being reported as having been cured by the free use of it, even after Madness and Convulsions had taken place. As an expectorant, Lobelia will be found of great use, and should generally be combined, more or less, with all Cough Mixtures. As an emetic, it may be used alone, or combined with an equal portion of Ipecac; or of Ipecac and powdered Blood Root; and the powdered Seed, or the Herb may be used. A heaping tea-spoonful of the powder is to be put into a cup or bowl, with half a pint of hot water (near the point of boiling, but not quite scalding, as scalding injures its strength), and after standing fifteen or twenty minutes, it is ready for use. It may be given then in half-teacupful potions, at intervals of five or ten minutes, along with Pennyroyal, or Composition Tea, or any other warm Herb Tea; and it is often well for the patient to drink pretty freely of some Warm Tea before commencing the Lobelia, to prepare the stomach for the emetic. The Lobelia should be continued till the patient has vomited two or three times thoroughly; after which, some thin Gruel or more Herb Tea should be taken. The tincture can also be used as an emetic, and this is generally the best to use for children. It can be sweetened and made quite palatable. The dose of the tincture for a grown person, as an emetic, is from one to two table-spoonfuls, repeated as before directed; and for children, about a tea-spoonful — always using freely some Warm Tea. In sudden attacks of Croup, there is nothing like the Tincture of Lobelia, given in doses of ten or twenty drops to a tea-spoonful, and repeated till relief or thorough vomiting is obtained. It can be given in Syrup or Honey. The throat and chest may also be bathed with the Tincture, or with Spirits of Turpentine. In using the tincture as a mere expectorant, for Coughs and the like, a grown person may, commonly, take from a half to a tea-spoonful; but I should say that half a tea-spoonful is the ordinary dose that people can bear without sickening; and in using the Ethereal Tincture, from ten to twenty drops. Ten drops, in many persons, produces sickness.

In Asthma, there is nothing to compare with it. When the Spirit Tincture is used, give commonly a tea-spoonful in a wine-glass of water, and repeat every half hour during the paroxysm, or till sickness or vomiting is produced. It appears that its efficacy is much enhanced and insured by its sickening agency. In some instances of difficult breathing, it proves beneficial, without occasioning nausea, or sickness; but when sickness results from its use, so far from that occurrence being a reason for discontinuing it, an additional inducement is afforded for pressing it, till full vomiting and the consequent relief is obtained. No apprehension need be entertained of its acting deleteriously; it may, therefore, in all cases of Oppressed Respiration, or Apparent Suffocation, especially when of the Spasmodic character, be fearlessly administered till full vomiting be produced, when the desired benefit is usually obtained. The leaves and seeds of Lobelia possess the active properties, and they lose a portion of their virtues by exposure to the light; hence they should be preserved in confined places. When the herb is required for use, it should be collected in July or August, before the leaves begin to fade, and spread thinly in a chamber or loft to dry, previously separating the stems from the roots. The air should be admitted into the apartment in the day-time, and excluded at night, if the atmosphere is damp. If it is desirable to obtain the seeds, the plant should not be gathered till the leaves begin to have a yellowish appearance, which will generally be in the latter part of August or the first week in September. After the herb is dried, the seeds are to be shaken from the pods and passed through a fine sieve, to free them from the pods and dirt.

Tincture of Lobelia — How Prepared. — Take of the pulverized Leaves, ¼ pound; Water and Alcohol, equal parts, 1 quart; infuse, or soak, for ten days in a closely-stopped bottle.

Tincture of the Seeds. — Take of the pulverized Seeds, 4 ounces; Water and Alcohol, equal parts, 1 quart; infuse, or soak, for ten days.

Tincture of the Green Herb. — Collect the Herb when in blossom, before the leaves begin to fade; pound in a mortar, till reduced to a pulpy mass; add Malaga, Madeira or Native Wine, sufficient to cover it; infuse, or soak, for a week or ten days, and strain and press out.

To cause vomiting, the dose for a grown person is a table-spoonful, which should be given in Warm Tea, and repeated every twenty or thirty minutes till the stomach is sufficiently cleansed. The dose for a child two years old, is from a half to a tea-spoonful, repeating as above, and two tea-spoonfuls for one, ten or twelve years old.

Lobelia Cardinalis. — Blue Cardinal Flower; also known as Blue Lobelia and Highbelia. This plant, quite common in the Southern

and Western States, grows from two to three feet high, with large leaves, growing smaller toward the top, which terminates in a spike, or stem, thickly set with large, pale blue flowers. The roots, which are the part used, are white, fibrous, and from two to six inches long. The whole plant, while green, is full of milky juice.

Medical Properties and Uses. — This species of Lobelia is not very extensively used as medicine. The roots are diuretic, anthelmintic, nervine, and anti-spasmodic; and, in large doses, slightly emetic and cathartic. It has been used with some success in Dropsy; also in Diarrhea and Dysentery, and as a remedy for Worms. Dose: of the powdered root, from half to a tea-spoonful, three or four times a day. It may also be used in infusion or decoction.

Lobelia Syphilitica. — This is the Red Lobelia, and by some known as the *Lobelia Surinamensis.* This species very much resembles the previous one in appearance, in every thing but its flowers, which are large, and of a beautiful pale-red color. It is a native of the West Indies, where it flowers in January and February, and continues in bloom until late in the summer. It is also found growing wild in many parts of the United States, usually in low, flat woods, and dry marshes.

Medical Properties and Uses. — The root is the part used, and is regarded by some, who are acquainted with its properties, as a most powerful and valuable alterative in the cure of Cancer, Scrofula, and in Venereal Diseases, particularly Syphilis — hence the name *Syphilitica.* In such diseases as these, it is used in strong decoction, the patient drinking from a pint to a quart in a day; and in case of Ulcers, they are to be washed with the same. It is very highly recommended as a cure for Cancer of the Breast of females — the decoction of the root to be drank daily, say a wine-glassful three or four times a day, and apply to the Breast or Cancer a poultice made of equal parts of Elm Bark and the powdered Root, or Leaves; mix up with the decoction, which is to be kept constantly applied, except as it is renewed — the Cancer, at each change of poultice, to be washed well with the warm decoction. For Ulcers, Wounds, Inflammations, and all affections which have a tendency to terminate in Gangrene, it is thought this plant will prove to be among the most valuable remedies. It has also been recommended in Dropsy. It seems to have long been an Indian remedy for Scrofula, Cancer and Syphilis, from whom its wonderful properties were first obtained. It is not very common in the Western States, and may be difficult to find.

Lungwort — (*Pulmonaria Virginica*). — This plant is more commonly known, perhaps, by the name of Cowslip. It is common to the United States, and, being rather a handsome plant, on account of its

beautiful blue flowers, is often cultivated in gardens. It usually grows from fifteen to twenty inches high.

Medical Properties and Uses.—The leaves are the part used, and are mucilaginous, demulcent and slightly astringent. Used in the form of infusion in Lung Affections, particularly Bleeding at the Lungs, and also as a demulcent in Dysentery.

Magnolia Tree—(*Magnolia Grandiflora*). — Among the numerous trees that adorn the American forest, this is the most beautiful, for its stately appearance, the richness of its foliage, and the magnificence and beauty, as well as delicious odor, of its flowers. It is a large tree, with dark, evergreen leaves, and in the spring is adorned with large, beautiful white flowers, which give off a strong and grateful odor, that fills the air with the delicious perfume for miles around. It is common to the low lands and swamps of the Southern States.

Medical Properties and Uses.— The bark of the root is the part used, and is considered a valuable aromatic tonic, and is often used, in the form of bitters, as a restorative tonic, as well as a remedy for Ague and Intermittent Fevers. By some it is even considered very similar to, and equally as good as, the Peruvian Bark; of this, however, I have my doubts. It is, nevertheless, a very excellent tonic bitter, and no doubt valuable in Dyspepsia, convalescence from Miasmatic Fevers, and wherever a mild, stimulating tonic is needed. Used in the form of bitters or decoction, in ordinary doses, two or three times a day.

Maiden-hair — (*Adiantum Pedatum*). — This is a delicate species of the Fern, growing usually from ten to fifteen inches high, with a slender, smooth, black stalk, and small Fern-like leaves. It is found growing plentifully in most of the States, in shady woods, and rich, moist soil.

Medical Properties and Uses.— The leaves are the part used, and are tonic, expectorant, refrigerant, and somewhat astringent. It is used in tea or decoction, and considered by many practitioners as an excellent cooling drink in Fevers; also in Coughs, Colds, Hoarseness, Asthma, Pleurisy, and Erysipelas. It may be used freely in decoction or syrup.

Male Fern—(*Aspidium Filix Mas*).—Male Fern is one of a peculiar sort of plants, having no stalk, but a number of large feather-like leaves or fronds ascending up from the root, from one to three feet high. It grows mostly in shady pine-woods, in the Atlantic States, from New York to the Carolinas. The root is the medicinal part, and requires to be carefully dried, then immediately pulverized and kept in tightly-closed bottles, or it will lose its virtue. There is an ethereal oil obtained from it, by distilling in Ether, which is the form

in which it is now mostly used, and which can generally be had at the drug stores.

Medical Properties and Uses.—It is only used as an anthelmintic, or Worm medicine, and then only for the Tape-worm. It is said to be the best remedy for this species of Worm that is now known. The proper way of administering this Oil, in such case, is to give from twelve to twenty drops at night in a little sweetened Mucilage or Syrup, and the same quantity again in the morning; two or three hours after the second dose, give a purgative of Castor Oil, or other active cathartic, and the Worm, if dead, will pass away, without any unpleasant symptoms. Should it fail, the doses, somewhat increased, are to be repeated. The dose of the powder is about two tea-spoonfuls, to be given in the same way as the oil.

Manna.—Manna is the concrete juice, a sort of candied gum, of a sweetish and pleasant taste, obtained from a small tree growing in some of the southern countries of Europe, especially in Calabria and Sicily; known in Botany as the *Ornus Europæa*, and also by the common name of Flowering Ash. Manna is to be found in the drug stores, in the form of a soft candy-like gum.

Medical Properties and Uses. — It is a mild and gentle laxative, that is, a gentle cathartic, and used mostly for children, on account of its pleasantness to the taste, and by Pregnant women, especially where there is a tendency to Piles. It is also often dissolved with other medicines, especially Worm medicines, to render them more agreeable to the taste. Children will eat it the same as Candy. The dose, as a cathartic, is from one to two ounces for a grown person, and from a dram to half an ounce for children.

Marsh-mallow—(*Althæa Officinalis*). — This plant is a native of Europe, but grows plentifully in many parts of the United States, generally about marshes and wet places, and is cultivated to some extent in gardens, and somewhat resembles the Hollyhock. It grows from three to six feet high, having delicate light pink-colored flowers, which appear from July to September, followed by little capsules or buttons, each containing a single seed. The whole plant is mucilaginous, but the root is the part generally used. It can always be found in the drug stores.

Medical Properties and Uses.—Demulcent, mucilaginous, and diuretic. Used in the form of decoction, making a sort of thin mucilage, and highly valuable in all affections of the Mucous Membranes, as of the Lungs, Bowels, and Urinary Organs; but especially the latter, as Inflammations of the Kidneys, Bladder, and Urethra. It is valuable in Inflammation of the Bladder, in Retention of Urine, Strangury, Bleeding from the Urinary Organs, and in Acute Gon-

orrhea. In all affections of the Urinary Organs, it is greatly aided by the addition of either Spearmint or Horsemint, or both, combining the two or three together, and making an infusion or tea. May be used freely. The leaves, buttons and powdered roots make an excellent poultice for Inflammatory Swellings, Bruises and Burns, and to prevent Gangrene.

Marsh Rosemary — (*Statice Caroliniana*). — Called also Sea Lavender. It is what is called a marine plant, as it grows only in salt marshes, along the sea-coast. It has a large fleshy root, which is the part used; stalk from one to two feet high, and flowers of a bluish purple, which appear late in the summer.

Medical Properties and Uses. — It is a powerful and very excellent astringent, and also tonic. In places where it is known, it is used very extensively and successfully by the people for Diarrhea and Bowel Diseases, in the form of decoction, made by boiling the root. The decoction is also used with advantage as an injection in Gonorrhea, Leucorrhea, Gleet, and Falling of the Womb, and as a wash for old Ulcers, and gargle for Sore Throat and Mouth. Useful in all cases where an astringent is needed, and can be used freely.

Marygold — (*Calendula*). — This is the common garden Marygold, cultivated for its beautiful yellow flowers.

Medical Properties and Uses. —Both the leaves and flowers are used in the form of tincture, to be applied to fresh Cuts, the same as the Tincture of Arnica is used for fresh Bruises, Contused Wounds, and the like. To make the tincture, take of both flowers and fresh leaves, bruise a little, fill a bottle, and then fill up with dilute Alcohol; that is, equal parts Alcohol and Water; or Whisky, with one-third its quantity of water added; let stand two weeks. In all fresh Cuts of the flesh, apply of this tincture, diluted with water; or to a tumblerful of water, add a table-spoonful of the tincture, and apply by means of lint or muslin saturated with this tincture and water. Valuable in all surgical operations. Keep the part wet with it for several days. It is a great Homeopathic remedy in cases of this kind. The tincture can be had at the drug stores by the name of Tincture of Calendula. It is also good applied to old Ulcers, to make them heal.

May Apple Root — (*Podophyllum Peltatum*). — Called also Mandrake, but known all over the country by the common name of May Apple. It grows probably in all the States, in rich woods, and generally growing in patches, and quite abundant wherever found. It has a smooth stalk or stem, about twelve to eighteen inches high, forked at the top with two or three large, irregular leaves, a large white blossom in the fork of the stem, which usually appears early

in May, succeeded by an apple or fruit, round, smooth, and when ripe, soft, pulpy, of a yellow color, about the size of a small hen's egg, juicy, slightly acid, and pleasant to the taste, and is very much liked by some persons.

MEDICAL PROPERTIES AND USES.—The root is the part used, and is a certain, powerful, and very valuable hydragogue cathartic. Valuable in active doses in all forms of Dropsy, and internal or local Inflammations, where you wish to produce copious Watery Discharges from the Bowels, and in that way draw off the excess of fluid in the system, lessen the circulating fluid, or produce a revulsive effect, as in case of Inflammation of the Brain. The powdered root was formerly taken as a cathartic; but latterly, since the introduction of the Podophyllin, which is made from this root, the substance is not so much used. The soft extract is also employed, and is an excellent form, especially if you wish to make it into pills. It is also used in tincture. In small doses, that is, what is termed alterative doses, the May Apple is an excellent hepatic, or Liver Medicine, acting as a stimulant to the Liver, as well as the whole Glandular system, and as a valuable alterative in Scrofulous Diseases, in Syphilis, Mercurial Taints, and the like. The dose of the powdered root, as a cathartic, is from thirty to sixty grains, or from half to a tea-spoonful, and it should be accompanied with ten or fifteen grains of powdered Cloves, or Pepper, or Spearmint, or five or six grains of Cayenne, to prevent griping and sickness at the stomach; and if you wish to have the fullest hydragogue effect, as in Dropsy or local Inflammation, give along with it double as much Cream of Tartar. The extract may be made by coarsely powdering a quantity of the dried root (the fresh root should never be used, as it is too acrid), and covering it in a vessel with dilute Alcohol (that is, Alcohol and Water, equal parts), and letting it stand for twenty-four hours or longer, then add more Water, and simmer slowly over a slow heat for one or two days; strain and squeeze, or press out; then evaporate the liquid over a slow heat till it becomes thick, like a pill mass, or conserve, when it may be put away in a jar for use. The dose of the extract, as a cathartic, will be five or six grains; and it should be made into two or three pills, adding a little Cayenne Pepper, or powdered Cloves, and perhaps some Rhubarb, or any other suitable powder, to render it thick enough to form pills. The addition of the Cayenne makes it act much quicker. As a Liver pill, take pulverized Lobelia Seed, 20 grains; Ipecac, 20 grains; Leptandrin, 20 grains; Sanguinarin, 10 grains; Cayenne, 10 grains; Extract of May Apple, enough to form into pill mass. Dose: as an alterative, and to act on the Liver, one pill every night, or once a day; as a purgative, three or four pills. This is an excellent Liver

and Anti-bilious Pill, suitable in all cases where a laxative or cathartic is needed.

Podophyllin.—This is a fine dark-yellow or greenish powder, the concentrated preparation made from the May Apple Root. It is the Samson among the vegetable remedies, and may be regarded as the substitute for Calomel, either as a cathartic, hepatic, alterative, or in any case whatever. It will be found to have quite all the beneficial effects of Mercury, without any of its injurious effects. It is given in different sized doses, owing to the effect you wish to produce, and in various combinations with other agents. It is a most admirable and convenient medicine, owing to the smallness of the dose required, and is applicable in all cases where a cathartic or purgative is needed, anti-bilious, hepatic, hydragogue, laxative or alterative, and may be combined in large or small proportions with any other medicine. You will find it recommended in the treatment of various diseases throughout this book, as well as several of the other Eclectic Concentrated Remedies, as Leptandrin, Macrotin, Sanguinarin, Hydrastin, etc. It can always be had at the drug stores, neatly put up in ounce bottles, and is one of the remedies that should always be kept in the house. The dose of the Podophyllin, as a purgative, is about two to three grains. Given alone, it is rather slow in its action, but combined with as much pure Cayenne, it will operate in half the time, or less. It is always best to combine a little Cayenne, Cloves, or Ginger, with it, to prevent nausea and griping; and if you wish the full hydragogue effect, as in Dropsy, internal or local Inflammation, give also along with it a tea-spoonful of Cream of Tartar. It generally acts better, and more efficiently, given in divided doses, say three grains divided into three equal doses, giving one every two hours. As an alterative, or Liver Medicine, it may be given in about half-grain doses, once or twice a day, and in such cases, it is best to combine with it as much Leptandrin and Sanguinarian; and if you add as much each of Ipecac and Cayenne, and make the whole into pills with Extract of Dandelion, so as to have half a grain of each in a pill, you will have one of the best pills known for torpid Liver, Bilious conditions of the system, Dyspepsia, and the like. One pill to be taken daily, or every other day; and as a purgative, three or four pills at a dose. If you will take 20 grains Podophyllin and 10 grains Cayenne, and make into ten pills, with a very little Mucilage Gum Arabic, or soft Extract of May Apple Root, you will have one of the best and most active purgatives known. One pill will operate in an hour.

May Weed—(*Anthemis Cotula*).—Wild Chamomile, and known everywhere by the name of *Dog Fennel*, and too common a weed to need description.

Medical Properties and Uses.—The herb and flowers are the parts used, and are tonic, diaphoretic, anti-spasmodic, emmenagogue, and in large doses emetic. The flowers are somewhat similar in their properties to the ordinary Chamomile Flowers, though not so strong, and less agreeable to the taste. It is generally used in infusion or tea, cold or warm, and used freely. It is an excellent diaphoretic or sweating tea, taken warm; and the cold infusion, taken in half-tea-cupful doses or more three or four times a day, is a good tonic, and has often cured the Ague. Combined with Boneset leaves, it would be still better. A warm tea of the flowers is very good to drink when taking an emetic, rendering its action easier and more thorough. It is good in all cases of Colds, in Painful Menstruation, and wherever you wish to promote perspiration. Also good in Spasmodic Affections. The extract made from the flowers and herb, is a good basis for pills for Sick Headache, Nervous Affections, for Ague, in convalescence from Fevers, and in Obstructed Menses — combining therewith such other articles as are suitable to the case. Externally, the herb, along with that of the Smart Weed and Hops, makes a valuable fomentation, to apply hot, after being boiled a while in Water, to the abdomen, in Inflammation of the Bowels.

Melon Seed—(*Cucurbita Citrullus*).—This is the common and well known Water-melon, the seeds of which are often used as a medicine.

Medical Properties and Uses.— Melon Seeds are a mild, mucilaginous, and very excellent diuretic, a tea of which is valuable in Retention of the Urine, Strangury, and all affections of the Urinary Organs, where a mild but efficient diuretic is needed. The seeds are to be bruised and infused in Boiling Water — the tea to be drank freely. It is also good in Inflammation of the Bowels, and in Fevers. The Pumpkin Seed (*Cucurbita Pepo*) are also diuretic, and very similar to the Melon Seed in their action, and are used for the same purposes.

Oil of Pumpkin Seed.—There is an oil obtained from the Pumpkin Seed, which is said to be a very efficient diuretic, in Strangury, Scalding of Urine, Gonorrhea, and all spasmodic affections of the Urinary Organs. Dose: of the oil, from six to ten drops several times a day. May generally be had at the drug stores.

Milk Weed—(*Asclepias Syriaca*).— This is known by the common names of Silk Weed and Milk Weed, and grows very plentifully throughout the United States. It is from two to four feet high; has a large, smooth stalk, with large oblong leaves, two opposite each other on the stalk, and large whitish-purple flowers, appearing in the months of July and August, and followed by large oblong pods, filled with a sort of fine cotton and seeds that somewhat resemble Parsnep

Seeds. The root, which is the part used, is large, white, and usually runs deep into the ground. The whole plant, when green, is full of a gummy, milky substance.

Medical Properties and Uses.—The root of this plant is regarded as a powerful diuretic, and valuable remedy in Dropsy, Retention of Urine, and the like. It is also an emmenagogue and alterative. Used generally in decoction, by boiling ½ a pound of dry root, bruised, in 6 quarts of Water, down to 2 quarts, and take half a teacupful three or four times a day. In drops it may be combined with Gin, or tinctured in Gin; and for Retention of Urine, may be sweetened with Honey, and given along with Spearmint Tea; to be taken cold. It is also given in powder; in which case the dose is from ten to twenty grains, three times a day; and of the saturated tincture, one to two tea-spoonfuls. The tincture is a good form to use it in as an emmenagogue, to be taken three times a day.

Motherwort—(*Leonurus Cardiaca*).—This plant grows in many places in this country, generally along roadsides, in fence corners, and about old buildings, barns, and the like. It grows usually from two to three feet high, generally in bunches, like the Hoarhound, and looks a little like it—but has much larger and darker green leaves.

Medical Properties and Uses.—The leaves are the parts mostly used, and are an excellent nervine emmenagogue and anti-spasmodic. To be used freely in warm infusion in all Female Complaints, such as Suppressed Lochia; Stoppage of the Menses, especially from taking cold; Hysteria; in all Nervous Affections of females, Restlessness and Inability to Sleep; Neuralgia, Spasms, and in Nervous Fevers. It is very valuable to bring on the Menses, where they have been checked by taking a sudden cold. The patient should drink freely of the warm tea, bathe her feet in warm water, and go to bed. A little Ginger in such cases, added to the tea, makes it more pleasant and aids the action. The root is said to be a good diuretic, used in decoction. The extract is a good nervine and emmenagogue, from three to six grains at a dose twice a day, in the form of pills.

Mullein—(*Verbascum Thapsus*).—Mullein is a common and well known plant, growing all over the country, in old fields, hilly pastures, along roadsides, and in newly cleared woodlands. It has a straight stalk, from three to six feet high, a spike of yellow blossoms at the top, and very large, soft, velvet-like leaves.

Medical Properties and Uses.—The leaves and flowers are used, and are demulcent, diuretic, and anodyne. An infusion or decoction of the leaves is good in affections of the Urinary Organs, especially in Inflammation of the Bladder and Kidneys, and in Gonorrhea and Leucorrhea; also in Dysentery, Coughs, and Bleeding from the Lungs

In Dysentery and Bowel Complaints, the leaves should be boiled in Sweet Milk, and rendered more agreeable to the palate by the addition of some aromatics, as Cinnamon, Cloves, and the like, and sweetened. The leaves are also good in the form of poultice or fomentation, applied to old Ulcers and Sores, and to the throat, in Malignant Sore Throat, and in Mumps. The flowers, if put in a glass bottle, tightly corked and placed in the sun for a few days, yield an Oil which is powerfully relaxing, valuable to apply to Stiff Joints, Contracted Tendons, Rheumatic Swellings, and the like. A tea made of Mullein Leaves and Horsemint, is very valuable in Affections of the Kidneys, to be drank freely.

Mustard.—There are two kinds of the Mustard common in this country, the Black and the White, technically called *Sinapis Nigra* and *Sinapis Alba*. The seed is the part used, and both kinds are about the same—the Black Seeds, perhaps, being a little the stronger.

Medical Properties and Uses.—Mustard Seed is stimulant, diuretic, irritant, and applied externally, rubefacient, and vesicant—that is, will produce a blister. Powdered Mustard Seed is extensively used as a condiment for Meats, and as a stimulant to the Appetite and Digestive Organs. It is a very good stimulant, and is often used with advantage in Dyspepsia and Weak Digestion. In large doses, that is, two or three tea-spoonfuls, it is a very quick, prompt emetic, and useful in case of swallowing Poison. When the seeds are used as a remedy for Dyspepsia, they should be swallowed whole; and when thus taken, in small doses, say a tea-spoonful two or three times a day, it communicates both warmth and vigor to the stomach and blood. It promotes an appetite, and gives a pleasant feeling to the whole system, acts on the liver, and gives a beautiful appearance to the skin. It should be taken two or three times a day, for a length of time—the Seeds swallowed whole with Water. I have cured the worst cases of Dyspepsia and Diseases of the Stomach by this simple remedy. In Palsy and Chronic Rheumatism, it is given to quicken the circulation and promote the vital actions. The Ground Seed makes an excellent poultice to relieve Rheumatic Pains, and to produce a revulsion in the circulation of the blood. Boiled with Milk, it makes a Medicinal Whey, useful in low Nervous Fevers. Ground Mustard is extensively used in the form of plasters or sinapisms, as they are medically called, as an external irritant, or to produce a sort of blister, to relieve Internal Pain and Inflammations, and is often very serviceable.

Nettle—(*Urtica Dioica*).—This is the common stinging Nettle, generally considered as a useless and troublesome weed. Yet it is a useful herb, as a medicine, and its properties ought to be better known.

Medical Properties and Uses.—It is astringent, tonic, and diuretic. A decoction of the root is highly valuable in Diarrhea, Dysentery, in all Bowel Affections, and in Hemorrhages from the Lungs, and other organs. A strong decoction of the Nettle Root, Wild Cherry Bark, and Blackberry Root, made into a syrup, is an extremely valuable remedy for the Bowel Complaint of children, as well as for grown persons. A decoction of the root is also one of the best remedies in Bleeding from the Urinary Organs. The seeds and flowers of the Nettle, tinctured in Wine or Spirits, and given in tea-spoonful doses three or four times a day, is said to be an excellent remedy for Intermittent Fever and Ague; the seeds, taken in doses of twelve or fifteen three times a day, are reputed a sovereign remedy for Goitre, or Big Neck. An infusion of the leaves is a good remedy for Bleeding at the Lungs or Stomach; the expressed juice of the fresh leaves, in tea-spoonful doses, still better.

Nut Galls. — These are little balls of a dark bluish or lead color, which grow on a shrub or small bush in some of the warmer countries of Asia, called the *Quercus Infectoria* — that is, Infected Oak, from the fact that these balls or excrescences are produced by the infection or puncturing of the tender green boughs by an insect or fly, for depositing its eggs. These balls or galls are imported into this country, mostly from the Mediterranean ports, and may generally be found at the drug stores. I have seen very similar balls growing on the leaves and young branches of small oak-trees in this country, caused, I presume, in the same way. They are sometimes called Ink-balls.

Medical Properties and Uses. — Nut Galls are a powerful astringent, and may be used with advantage wherever astringent remedies are needed, especially in Chronic Diarrhea, and in what are called Passive Hemorrhages. They are used in infusion and in tincture. For children, in Bowel Complaints, they can be boiled in Milk. An infusion of Galls, with a little Alum dissolved in it, is a valuable injection in Gonorrhea, Leucorrhea, Gleet, Falling of the Womb, Sore Mouth from being salivated, and the like. Two or three of the Galls are enough to make a pint of strong infusion. Dose: from two to four table-spoonfuls; of the tincture, from twenty drops to a tea-spoonful.

Nutmeg—(*Nux Myristica*).—Nutmeg is a well known article, to be found in all the drug stores and other stores in the country. It is the kernel of the fruit of a tree cultivated in the West Indies and other warm latitudes, which grows to the hight of twenty to thirty feet, called the Nutmeg-tree, or *Myristica Moschata*. The outside, or covering of the nut or kernel, constitutes the article known as Mace, and found also in drug and other stores.

Medical Properties and Uses.—Nutmeg is an aromatic stimulant and stomachic, and often used along with other articles in Diarrheas and Dysentery, especially in syrups and the like. It is also used extensively to flavor articles of diet and drinks for sick and convalescent persons, and is very grateful and pleasant. Both the Nutmeg and Mace are said to possess narcotic properties, and should not be taken in doses of more than twenty or thirty grains at a time.

Nux Vomica. — These are the seeds of a tree which grows in the East Indies, called *Strychnos Nux Vomica.* They are of a brownish color, hard, nearly flat, and round, about as large as an ordinary sized coat button, and are often called Dog Buttons, from the fact that they are often used as a poison to kill dogs. They may generally be found in drug stores; also the extract of Nux Vomica, which is made from them.

Medical Properties and Uses. — Nux Vomica is a powerful and deadly poison, if taken in sufficiently large quantity, and when used, it must always be with caution. You should never take it except by the direction of a physician. It is from this article that Strychnine is made — one of the most deadly poisons known. In poisonous doses, it produces Convulsions, Asphyxia and Death. Even in moderate or small doses, it sometimes produces unpleasant symptoms, such as general weakness, trembling in the limbs, slight rigidity of the muscles, heat in the stomach, constriction of the throat and chest, retention of urine, slight spasms of the muscles, pain in the head, vertigo, or dizziness, and the like. Nux Vomica, in whatever form it is used, is always to be taken in very small doses; it then acts as a nervous tonic, and is mostly used in the treatment of Paralysis, or Palsy. It is used in both general and local Palsy, and is especially recommended in Paralysis of the Bladder. It is also used, and by some highly recommended in St. Vitus' Dance, Mania, and Neuralgia; also in Dyspepsia, Habitual Constipation, Rheumatism, Chronic Dysentery, and Chronic Inflammation of the Spleen. The dose of powdered Nux Vomica is from one to three grains, for a grown person, three times a day, as a tonic; of the extract, which is the best form in which to use it, about one-twentieth of a grain, three times a day. The extract is usually powdered and mixed with other articles, suitable to the case, so as to have one grain of it in about twenty pills; one pill to be taken two or three times a day. This is a tonic in Dyspepsia and the like. In cases of Paralysis, as much as half a grain to a grain of the extract may be given at a dose, and may be gradually increased, until some unpleasant symptoms begin to manifest themselves. The tincture, which is also kept in drug stores, is used in doses of five or six drops, three times a day, gradually increased up to thirty drops.

Opium. — Opium is the concrete juice of the White Poppy, medically called *Papaver Somniferum*. The Poppy is cultivated, more or less, in many of our gardens, and is a familiar plant to most persons in this country. It has large white blossoms, followed by a pod, containing the seeds. The whole plant contains a milky juice, which, on becoming thickened or hardened, constitutes the Opium found in the drug stores. The Opium of commerce is obtained mostly from Turkey and neighboring countries, where the Poppy is extensively cultivated.

Medical Properties and Uses.— Opium is a powerful narcotic; also sedative, anti-spasmodic, and diaphoretic, while at the same time it checks the operation of the Bowels, and the action or secretion of the Mucous Membranes. No medicine has ever been discovered that can compare to it for moderating and relieving Pain, or in promoting Sleep. Its sedative virtue resides in a principle called Morphia, or Morphine. A grain of Opium taken into the Stomach, produces remarkable composure of the mind, followed by languor and drowsiness; the pulse becomes slower, fuller, and softer; all the secretions are, in the first instance, diminished; the motion of the bowels is retarded; the thirst increased, and the mouth dry. The heat of the body is increased, and the senses rendered dull. In the course of three or four hours, a perspiration or sweat is produced. The narcotic effect of a dose of Opium lasts generally about eight hours; and in general, a full dose of it can not be given with safety oftener than three times in twenty-four hours. In cases of great pain and distress, however, it can be given much oftener, and in larger doses, than in others. In too large a dose it produces an Apoplectic state, and Death. The medium dose of Opium is one grain, in the form of a pill. It is often, however, given in doses of three grains; but in such cases there must be great pain to require such heavy doses. Opium operates differently upon different constitutions. Upon some persons, half a grain will have as much effect as a grain or a grain and a half upon others. In almost all diseases attended with Pain, Distress and Loss of Sleep, Opium, Laudanum, or Paregoric is more or less used. In Dysentery, Diarrhea, Cholera Morbus, Colic, Epilepsy, Lockjaw, Spasms, Hypochondria, Gravel, Asthma, Consumption, Wounds, Fractures, Dislocations, Toothache, Tic Douloureux, and threatened Abortion, Opium, in one form or another, is found of great service. It is, perhaps, used more frequently in the forms of Laudanum and Paregoric than in any other; though it is much used, especially by physicians, both in substance and in the concentrated form of Morphine.

Laudanum. — This is simply the Tincture of Opium. It is made

by tincturing 1 ounce of Opium, broken to pieces, in 1 pint of Spirits or dilute Alcohol. The dose of Laudanum for a grown person is from thirty to sixty drops, and may be repeated two or three times in the course of twenty-four hours. A tea-spoonful is a large dose, and can be given only in extreme pain and distress. The common dose for a child between one and three years old, is from three to seven drops; for a child six months old, two, three, or four drops. One drop may be given to a child a month old.

Paregoric. — This is a milder preparation of Opium, along with some other articles. It is made as follows: Take Opium, ½ dram; Benzoic Acid, ½ dram; Oil of Anise, 30 drops; Gum Camphor, 20 grains; dilute Alcohol or Spirits, 1 pint; let stand, and macerate or tincture for two weeks, shaking occasionally, then strain or filter through paper. It is mostly used for children. The dose for children is from five to twenty drops, under three years of age; and over that, from twenty drops to a tea-spoonful; for a grown person, a table-spoonful. It is a pleasant anodyne and anti-spasmodic. These preparations may always be had at a drug store.

Morphine. — This is a highly concentrated preparation of Opium. It is in the form of a fine white powder. The dose for a grown person is from one-sixth to one-third of a grain — one-fourth of a grain being a full medium dose. Persons habituated to its use, by taking it for several days or weeks in succession, will come to bear as much as a grain; but more than a third of a grain should never be taken at once by persons not in the habit of its continued use, and then only in severe pain, as Neuralgia, Toothache, and the like. Infants and very young children should never take it, as there is great danger of giving too much. There are several preparations of Morphine, but that known as Sulphate of Morphia is most commonly used, and is what is always understood by the term *Morphine*. It is sometimes styled the "Divine Medicine," and stands unrivaled in the Materia Medica as an immediate remedy, and for giving temporary relief, in all cases of severe pain.

Orange Peel. — This is the outside rind or peel of the well known and delicious fruit of a small evergreen tree, called technically *Citrus Aurantium*, which grows in warm latitudes of the United States, and other warm countries. Oranges are extensively cultivated in Louisiana and other of the Gulf States, and are raised in immense quantities in Cuba, and other West India islands. The best, however, are from Sicily, in the Mediterranean, and Seville, in Spain.

Medical Properties and Uses. — Orange Peel is a mild bitter tonic, and excitant of the digestive organs. It is mostly used in the form of bitters, and then generally along with other articles, to correct their

taste, and render them more agreeable. The juice of the ripe Orange is very refreshing, and often serviceable to the sick, especially to those suffering with Fevers. It is not only harmless, but often beneficial — especially if desired by the patient.

Orris Root — (*Iris Florentina*).—This is a nice, clean, white root, to be found generally in the drug stores. It is a species of the Flag, native to Europe, but cultivated to some extent in the gardens of this country. It is of little consequence as a medicine, but is used extensively in Tooth Powders and the like, to improve the breath. The root may also be chewed for the purpose. It possesses a peculiar, mild, and quite pleasant flavor.

Parsley — (*Apium Petroselinum*).—This is the common garden Parsley, a fine, aromatic herb, cultivated in all our gardens, for culinary purposes.

Medical Properties and Uses. — The root of the Parsley is one of the very best diuretics, in general Dropsy, and in cases of Retention of Urine and Strangury. It is to be used in infusion or tea, of a teacupful, three or four times a day. The seeds are also used for the same purpose, and as a carminative; but are not so good a diuretic as the root. An ointment made of the leaves and seeds is said to be a certain antidote for Lice and all kinds of vermin, to be applied to the head; or the powdered seeds and leaves sprinkled on the head, it is said, will answer as well. The bruised leaves of the Parsley, moistened with Spirits of Camphor and applied to the breasts, will soon dry up the Milk, where this is desirable. There is an oil obtained from the Parsley, which is a good diuretic; used in doses of three to six drops, twice a day, in Dropsy — also in Diseases of the Kidneys and Urinary Organs.

Peach-tree — (*Amygdalus Persica*).— The Peach-tree is said to be a native of Persia, but is extensively cultivated in this country, and is too well known to need any description. The leaves, kernels, and bark of the root are used as medicine.

Medical Properties and Uses.— Tonic, diuretic, hepatic, alterative, sedative and somewhat laxative. A strong bitters made of the leaves and bark of the root, taken in moderate doses three or four times a day, is one of the best remedies I ever tried for Jaundice; also a good bitters in all affections of the Liver, and in Dyspepsia. A cold infusion or strong tea of the leaves, given in table-spoonful doses every hour or oftener, is highly beneficial in Inflammation of the Bowels or Stomach; at the same time, a fomentation of the leaves, boiled either alone or with Hops, or other bitter herbs, should be applied externally, as warm as can be borne. The kernels are made into a syrup or cordial sometimes, and used in Diarrhea, Dysentery,

and the like, with a very fine effect. They are also used in the form of tincture, made by adding 2 ounces, bruised, to 1 pint of Brandy. Dose: a tea-spoonful three to six times a day, and good as a tonic in Intermittent Fever, in Leucorrhea, Dyspepsia, and in General Debility. Peach-kernel, powdered, mixed with Blackberries, and made into a cordial, with a little Cinnamon, Cloves, and Allspice, is a splendid medicine for the Summer Complaint, as well as for all Bowel Complaints for the old or young.

Pennyroyal—(*Hedeoma Pulegioides*).—This well known herb needs no description; it grows almost everywhere, and is known by every body.

Medical Properties and Uses.—It is a pleasant, aromatic diaphoretic, diuretic, and emmenagogue. May be used freely in the form of tea, as a sweating and cooling drink in Fevers; in diseases of the Urinary Organs, Suppressed Menses, and Colds generally.

Peony Root—(*Pœonia Officinalis*).—Known as Garden Peony. This plant is also a native of Europe, but is to be found generally in the gardens of this country, being cultivated on account of its beautiful, large, red flowers. It grows about two or three feet high, having erect, dark-green, branching stalks, large leaves, and numerous, long, spreading roots, extending deep into the ground.

Medical Properties and Uses.—The root is the part used, and is considered an excellent nervine and anti-spasmodic tonic. When fresh, the root has a strong, disagreeable smell, and rather sickening, bitter-sweetish taste; when dried, these unpleasant properties are measurably lost. It has long been used as an anodyne and anti-spasmodic remedy in certain nervous affections, as Epileptic and other Fits, in St. Vitus' Dance, and also in Hooping-cough. For this latter complaint, it is thought best to use it in combination with the Black Cohosh Root, in the form of syrup. Peony is generally used in infusion, 1 ounce or so of the root, coarsely powdered or bruised, to 1 pint of Boiling Water. Dose: from a third to half a teacupful, three or four times a day; of the powdered root, about a tea-spoonful, three times a day, in case of Fits or Chorea. It was regarded by the ancients as a sovereign remedy for Fits, or Epilepsy.

Peppermint—(*Mentha Piperita*).—Peppermint is a native of Europe, but has been introduced into this country, and is extensively cultivated here, besides growing wild in many places. It is a very fragrant, aromatic herb, growing usually from one to two feet high, and preferring moist, rich soil, or wet places. It is very extensively and profitably cultivated in some places for the purpose of distilling the oil, which is done from the green herb. It is quite similar in appearance and

fragrance to the Spearmint, and not easily distinguished by inexperienced persons, though there is an essential difference.

Medical Properties and Uses.—The leaves are the part most used, though the whole herb is medicinal. It is a powerful and agreeable aromatic stimulant, very diffusive and penetrating, and is also carminative, anti-spasmodic and anti-emetic. Used as a stimulant, to promote perspiration, to relieve Flatulent Colic and Griping Pains, especially in combination with griping cathartic medicines, and to allay or prevent nausea and sickness at the stomach. It is also good in Cramps and Spasms of the Stomach, in Hysterical Affections, in Bowel Complaints of children, and to render other medicines more agreeable. It may be used freely in tea or infusion, either alone or in combination with other articles. It is also used in the form of essence, which is made by dissolving 1 dram of the oil in 1 ounce of Alcohol. Dose: of the essence, from one to two tea-spoonfuls for a grown person, and ten to thirty drops for infants, in a little sweetened Water; of the oil, from one to five or six drops, on a little Sugar. The oil and essence may always be had at the drug stores. The powdered leaves of the Peppermint enter into the Neutralizing Powder and Cordial, and into Beach's Anti-bilious Physic.

Peruvian Bark—(*Cinchona Officinalis*).—This is the bark of a tree which grows in South America, and the bark being pulverized for commerce, is sent to this country, and may be purchased at any drug store. The use of this bark was first learned from the following circumstances: Some of the trees being thrown by the winds into a pool of water, lay there till the water became so bitter that every body refused to drink it; but one of the neighboring inhabitants being seized with a violent paroxysm of Fever, and finding no other water to quench his thirst, was forced to drink this, by which he was perfectly cured. He afterwards related the circumstance to others, and prevailed on some of his friends, who were ill of Fevers, to make use of the same remedy, with whom it proved equally successful. After this, it was taken to Europe by the Jesuits, and hence called Jesuit's Bark. The use of Peruvian Bark was first discovered, like most other remedies, by accident, or rather providentially.

Medical Properties and Uses.—The red and yellow kinds are the best; but I have usually, in my practice, used the red. It is taken in the form of powder, or a tincture made with Wine. If properly administered, it is a sure remedy for Chills and Fevers. The Quinine of commerce is a production of the Peruvian Bark. This extract is now generally used in the room of the bark, having all the strength of the bark concentrated in it, and the dose, being smaller, is more easily administered. The Peruvian Bark, as well as Quinine, is a powerful

anti-periodic tonic, and when used as such, for the purpose of breaking the Ague, it should be taken in doses of about a tea-spoonful or thirty to sixty grains, three or four times a day, in a little Wine, Cider, or any thing that may be preferred; as a mere strengthening and restorative tonic, from ten to twenty grains, twice or three times a day, would be the proper quantity. The Quinine, however, which is made from this article, is now generally used in its stead. For the manner in which Quinine is used, see the various preparations under the head of "Fever and Ague," etc.

Pink Root — (*Spigelia Marilandica*).— Called also Carolina Pink. It is a native of the United States, growing wild, and mostly in the Southern Atlantic States. It grows usually from twelve to eighteen inches high, having an erect, purplish colored stalk, with opposite leaves, pink-shaped flowers, which are of a bright red color outside and yellowish inside, and a bunchy, fibrous root.

Medical Properties and Uses.—The root is the part used, and may always be had at the drug stores. It is regarded as a valuable and very certain Vermifuge, and is generally used for that purpose. It is, especially in large doses, somewhat narcotic, and liable to produce unpleasant symptoms if given alone — such as Dizziness, Dimness of Sight, slight Spasms, Twitching of the Eye-lids, and sometimes Convulsions. But all such symptoms are avoided by giving it in combination with some suitable cathartic — such, for instance, as Senna Leaves. Who does not recollect "Pink and Senna," as associated with his infantile days? The most usual way of using it, as a remedy for Worms, is: Take of Pink Root, ½ ounce; Senna and Manna, each, 2 drams; mix, and steep in 1 pint of Boiling Water. Dose: an ounce or two, twice a day. When the powdered root is given in substance, the dose is, for a child, from five to twenty grains, according to age; for adults, from one to two tea-spoonfuls, twice a day.

Plantain — (*Plantago Major*).— This is the Major, that is, large Plantain — a well known plant, growing in moist, rich soils, but most commonly along roadsides, in door-yards, or orchards, and grass-plats about houses. It has light green, smooth leaves, from six to ten inches long, and a spike or seed-stem from eight to twelve inches long, covered closely with seeds. The root, leaves and seeds are useful in medicine.

Medical Properties and Uses. — Plantain is a cooling alterative diuretic, somewhat astringent and mucilaginous — the seeds particularly so. The green seeds and seed-stems, bruised and boiled in Milk, is an excellent remedy in Diarrhea, Dysentery and Bowel Complaints of children. May be given freely. A decoction of the roots is highly recommended as an alterative in such constitutional diseases

as the Scrofula or King's Evil, Syphilis, and inveterate Skin Diseases; it might be well to combine the root with other alteratives in making alterative syrup or decoction. The juice of the fresh leaves taken internally in doses of a tea-spoonful every hour, and the bruised leaves applied to the wound, will, it is said, cure Snakebite, as well as that of Spiders and other Poisonous Insects. Plantain leaves bruised, or made into a poultice, are excellent applied to Wounds, Sores, Ulcers, Erysipelas, and the like, and also make a good ointment or salve, by being stewed in Mutton Suet. A decoction of the Plantain may be taken freely — from a half to a teacupful three or four times a day.

Pleurisy Root — (*Asclepias Tuberosa.*) — It is called also Butterfly Weed, White Root, etc. This plant rises about three feet high, several stalks in a bunch, and may be most easily distinguished by its bright orange-colored blossom, which appears in July and August. It grows in most of the States, preferring open situations, and loose, or gravelly soils, along streams and on hills. Also common to the Western prairies, and often found in old fields and fence-corners.

Medical Properties and Uses. — The root is the only part used, which is large and white. It is considered an excellent sudorific or sweating medicine, and good also in Wind Colic or Flatulency, as well as in Affections of the Chest and Lungs. It is a very popular remedy for Pleurisy in many places; hence its common name. It is used in the form of tea or infusion, and to be drank freely, warm. It is also used extensively in Fevers, to promote perspiration, generally in combination with other articles, as the powdered Blood Root, Composition Powders, and a little Lobelia, and the like.

Poke Root — (*Phytolacca Decandra*). — Commonly known as Poke; but sometimes also by the names of Pigeonberry, Garget, and Skoke. It is a native of this country — and I presume very generally and well known—having a large, rank, soft stalk, growing usually five or six feet high; large leaves; long bunches of greenish-white flowers, followed with large bunches of berries, soft, and of a blood-red color when ripe — and very well known as "Pokeberries." The Poke grows in nearly all of the States, along roadsides, in fence corners, and uncultivated or neglected fields. It has a very large, soft, fleshy root.

Medical Properties and Uses. — Poke root is a powerful alterative, and in sufficiently large doses is emetic, cathartic, and narcotic. It is never used, however, as either an emetic or cathartic, but generally for its alterative and purifying effect, in such diseases as Scrofula, Skin Diseases, Syphilis, and Rheumatic Affections. As an alterative in such cases, the dose of the powdered root is from two to six grains, two or three times a day; of the extract, from one to three grains.

It is very often used in extract — both that made from the root, and that made from the juice of the berries — in combination with other articles, in the form of pills. Both the root and berries are used, and with success, in Rheumatism, in the form of bitters — combined with about equal proportions of the Black Cohosh Root and Gum Guaiac — say 1 ounce of each in 1 quart of Rye Whisky, and taken in ordinary doses three times a day. The fresh root roasted in Hot Ashes until soft, and mashed and made into a poultice, is an excellent application for Tumors, Felons, and the like, to "scatter" them, or prevent them from coming to a head; or, if too late for that, to hasten suppuration. The powdered root, mixed with a little Lard, is a good ointment for the Itch, Scald-head, and the like. The juice of the green, full grown leaves, allowed to thicken by evaporation in the sun, and then made into a thick plaster with Gunpowder, is considered by some a certain cure for Cancers, applied once a day as a plaster. Poke Root is also used in the form of tincture, in Rheumatism and other diseases, as Scrofula and Skin Diseases. Dose: a tea-spoonful, three or four times a day.

PHYTOLACCIN. — This is the concentrated article, made from the Poke Root. It is in the form of a fine light brown powder. Dose: as an alterative, from a half to a grain, two or three times a day.

Poplar — (*Liriodendron Tulipifera*). — This is the common Poplar-tree; known also as the Tulip-tree. It is usually a very large, straight, magnificent tree, and is used extensively for lumber. It is sometimes called White, and sometimes Yellow Poplar, and is one of the finest, as well as most useful trees, of the American forest.

MEDICAL PROPERTIES AND USES.—The bark of the root is the part used. It is a splendid, bitter, and aromatic tonic, useful in Intermittents, and as a restorative in debilitated conditions of the general system. There is no root or bark, within my knowledge, that I consider more reliable. During a long experience it has proved in my hands one of the most valuable remedies, and may be given in every instance to restore the general health. I have found it superior to the Peruvian Bark, and when administered in equal quantities with Wild Cherry Tree and Dogwood Bark, to which may be added, after the decoction is made by boiling, a portion of good French Brandy, or other good Spirits, will prove a certain and speedy remedy in the Chills, Intermittent Fever, Worms, and Hysteria, which generally arises from a diseased womb. In dyspeptic states of the Stomach and Bowels, this is a valuable remedy, owing to its tonic or stimulating powers. It may be made into a bitter, with either Spirits or good Wine. A dose of the bark is from a half to two drams in powder. The infusion, or decotion, is made with ½ ounce of the

powder to 1 pint of Boiling Water. I generally prepare it in the following manner: By boiling it as strong as possible, and adding as much good Spirit as will keep it from getting sour. Dose: from half to a wine-glassful three times a day, before meals, for an adult, or grown person. It may also be used in strong, or saturated tincture; the dose of which is a tea-spoonful or two. Its principal use, however, is in the form of restorative and tonic bitters, for which it is an admirable article.

Poppy — (*Papaver Somniferum*). — This article, which is the common White Poppy, has been alluded to under the head of "Opium" — which drug is made from the Poppy, as has been explained. The Poppy is more or less cultivated in our gardens; generally, I presume, as an ornament, rather than for its medicinal properties. It is a valuable plant, however, and may be used, in the form of decoction or infusion in many cases, instead of the Opium, being possessed of the same narcotic or Opium principle, but in a less degree. The leaves, stalks and heads all contain the narcotic principle. Poultices made with a decoction of this plant are excellent applications to lessen pain, and act as a soothing remedy, in Ulcers, Painful Swellings, and Inflammations. An infusion or tea of the leaves, blossoms, or heads, may be drank in moderate doses in Painful Menses, Hysterics, Diarrhea, Cholera Morbus, Nervous Headache, Neuralgia, Tooth and Ear-ache, Nervous Coughs, and in any case where Opium, Laudanum, or Paregoric might be used. Every family should save a quantity of Poppy leaves and heads, for such purposes.

Prickly Ash — (*Xanthoxylum Fraxineum*). — The Prickly Ash is a small tree, from fifteen to thirty feet in hight, common in the Northern, Middle, and Western States. The berries, when ripe, are small and black, something near the size of Cloves; are hot, pungent and peppery to the taste, and contain an oil which gives them a fragrant, agreeable odor, somewhat like that of Lemon. The bark also possesses a pungent, acrid, hot and aromatic taste.

Medical Properties and Uses.— Both the bark and berries are used, and are stimulant, tonic, alterative and astringent. The berries are also carminative and anti-spasmodic, and seem to act specially on the mucous membranes or tissues of the system. On this account, a saturated tincture of the berries is found to be an excellent article in Cholera, and other diseases of the Bowels — generally used in combination with other articles, as Cloves, Cinnamon, Camphor, Gum Guaiac, Gum Myrrh, etc. Prickly Ash Bark (of the root) as well as the berries, is considered a good remedy for Rheumatic affections, in the form of bitters, that is, tincture in Whisky — usually along with other articles, such as Gum Guaiac, Poke Root and Black Cohosh

Root. They are also an excellent tonic — especially in recovery from Fevers. In all cases where a stimulating alterative is needed, the Prickly Ash, either alone or in conjunction with other agents, will be found of great use. It warms up and invigorates the stomach, improves and strengthens the digestive organs, opens the pores and promotes general perspiration, and tends to equalize the circulation. For purposes of this kind, and as a strengthening stimulating bitters, there is nothing better grows in our woods. The tincture of the berries is an excellent remedy for Colic, Pains in the Stomach and Bowels, Diarrheas, Rheumatism, Cold Feet and Hands, and for whatever depends on a sluggish circulation. Dose: of the powder, either of the berries or bark of the root, ten to thirty grains three or four times a day; of the tincture, one to two tea-spoonfuls; and to be used in ordinary doses.

Ptelea — (*Ptelea Trifoliata*). — This is a small bush or shrub, growing usually from six to ten feet high, and is known generally by the name of Wafer Ash, or Swamp Dogwood. It grows most commonly in swampy or wet places, or in shady places, about the edges of swamps, in bottoms, and the like. It takes its name of Wafer Ash from its fruit or seeds, which are near the size and shape of an ordinary wafer, being about three-quarters of an inch in diameter, quite thin, with a sort of winged edge all round.

Medical Properties and Uses. — The bark of the root is the part used, and is one of our best native tonics. It is used in Fever and Ague, Intermittent Fevers, and wherever a tonic is needed. It is also said to be a valuable remedy in Asthma, when tinctured in Whisky, and taken in doses of one or two tea-spoonfuls several times a day. But it is mostly used as a tonic in the Chills, or Fever and Ague, either in the form of bitters, along with other bitter barks and roots, or alone; and may also be used in powder, and in extract. Dose: of the powder, twenty to thirty grains, three to six times a day; of the tincture, one to two tea-spoonfuls; and of the extract, three to six grains.

Pumpkin Seed — (*Cucurbita Pepo*). — Pumpkin Seed, as well as Pumpkins, are too well known to need any description.

Medical Properties and Uses. — Pumpkin Seeds are an excellent mucilaginous diuretic, very similar in their operation to the Watermelon Seed. To be used freely in infusion or tea in affections of the Urinary Organs, and Inflammations of the Bowels. Good in Retention of Urine, Inflammation of the Bladder, and to be used the same as Melon Seeds.

Quaking Asp — (*Populus Tremuloides*). — Called also Aspen, Silver Poplar, and White Poplar. This is a small, slender, straight tree, from thirty to fifty feet high, growing in the Northern and Western

States, and the Canadas, usually in groves, and in low, level, or moist grounds, in the edges of prairies, and the like. The outside bark of the tree is smooth, of a grayish color, sometimes nearly white; the leaves, which are constantly *trembling* when there is but the slightest breeze stirring — and apparently even when there is no perceptible breeze — are green on the upper side, and of a silvery color beneath. It grows plentifully along the borders of the Western prairies, especially where the ground is low and flat.

Medical Properties and Uses.—The inner bark of the Quaking Asp is one of our best bitter tonics in all cases of Ague, Intermittent and Bilious Fevers, and wherever a good tonic, anti-periodic, and strengthening medicine is needed. It is mostly used in the form of bitters, and generally along with other articles, as Dogwood Bark, Wild Cherry Bark, Gentian, Golden Seal, Colombo Roots, and the like. It may also be used freely in infusion or decoction, and in powder. Dose: of the powdered bark, about a tea-spoonful, from two to six times a day; and in bitters may be used freely, as a restorative, in Debility, Loss of Appetite, Weak Digestion, Dyspepsia, Chronic Diarrhea, and in all cases of recovery from the Fall Fevers.

Quassia—(*Picræna Excelsa*).—This is a large, tall tree, native of Jamaica and some parts of South America, and is also known as Bitter Ash and Bitter Wood. The wood is the part used as medicine, and is extremely bitter. It can generally be found in the drug stores of this country, in small blocks or chips; is of a light yellowish color, without odor or smell, but is of a pure intense bitter taste. There are also what are called *Quassia Cups* to be found now in the drug stores, being a sort of wooden cup or goblet, made of the Quassia Wood, for the purpose of drinking out of, to obtain the bitter or tonic properties of the wood—which is so bitter, and yields its properties so readily to water, that if water is allowed to remain a few minutes in the cup, it will become quite bitter. What is most singular, this bitter principle seems almost inexhaustible. The use of these Quassia Cups is very beneficial to Convalescent, Dyspeptic, and Debilitated Persons.

Medical Properties and Uses.—The Quassia Wood is tonic and anthelmintic, and considered valuable in Dyspepsia, General Debility, and Weakness, and during recovery from Intermittent and Bilious Fevers. It is used mostly in infusion, which is made by infusing, for twelve hours, 1 ounce of the fine chips or raspings of Quassia in 1 quart of Cold Water; the dose of which is about half a teacupful three times a day, still leaving the Quassia in the Water; a little Ginger Root, Cloves, Lemon Peel, and the like, may be added, to render the infusion more palatable to the taste. The dose of the

Tincture of Quassia is one to two tea-spoonfuls, and of the extract from one to three grains.

Queen of the Meadow — (*Eupatorium Purpureum*). — Also sometimes called Gravel Root and Trumpet Weed. This weed grows in most of the Eastern, Middle and Western States, usually in low meadows, marshy places, and open, wet grounds. It rises about four or five feet high, having a dark green, purplish stalk, usually in low bands around each joint. The leaves come out in whorls of three to six together around the stalk, from six to eight inches apart; toward the top it divides into several branches, which terminate in large bunches of flowers, of a light purplish color, varying to white, the flowers being in the shape of small tubes or trumpets; they appear in August. This weed has somewhat the appearance of the Boneset, and is, indeed, a species of it.

Medical Properties and Uses. — The root is the part used, and is regarded by Botanic physicians as a valuable diuretic, while it is also somewhat tonic, stimulant, and astringent. It is highly esteemed in Dropsical Affections, in Gravel, and Affections of the Kidneys and Urinary Organs, to be used generally in decoction; that is, by boiling for a few minutes three or four ounces of the bruised roots in as many pints of water, and give in doses of from a half to a tea-cupful three or four times a day.

Eupurpurin.—This is a concentrated, resinous extract, obtained from the Queen of the Meadow Root, and may be generally had at the Eclectic drug stores, and perhaps at others. It is a powerful and very valuable diuretic, especially in Dropsy, and affections of the Kidneys, Strangury, and the like. It is to be given in the form of pills, in doses of about three grains every three to six hours.

Quinine — (*Sulphate of Quinia*). — This is a fine, white, crystalline powder, obtained by chemical process from the Peruvian or Cinchona Bark. It is an Alkaline Salt, and contains all the virtues of the Peruvian Bark, highly concentrated, and may therefore be used in all cases instead of the bark. It is preferable to the bark in most cases, on account of the smallness of the dose, which is, in ordinary cases, from one to two grains; though it is often given in much larger quantities. It is a well known article, and can always be found in the drug stores, being the principal remedy for the Chills and Fever of the Western country.

Medical Properties and Uses.—Quinine is a pure, intensely bitter, and most powerful tonic, febrifuge and anti-periodic. It is a standard remedy, and altogether the most successful and popular one, for the Ague, Intermittent and Remittent Fevers, and is used very extensively for that purpose. It is also valuable in all cases where a tonic is called

for. There is, in many parts of the country, a prejudice among the people against its use. If given in very large doses, as it often is, it produces a fullness of the head, and ringing or buzzing in the ears, for a while; and if continued long, that is for weeks, will produce, it is said, an Enlargement of the Spleen, and a general tendency to Dropsy. I am satisfied, however, that the prejudice against the article is, in most cases, greater than the facts will justify; and that it is one of the most valuable and useful tonics known to the profession. The ordinary dose of Quinine, as a tonic and restorative, is about a grain for a grown person, two or three times a day; but as an Anti-periodic and Ague remedy, it may be given at the rate of one grain every hour, or every two hours, until twelve to fifteen grains are taken. It is also given in doses of three to five grains, and repeated every three or four hours, until from twelve to twenty grains are taken. It is best always to give it during intermission; that is, when the patient is free from Fever. When the Fever is of the Intermittent kind, occurring every other day, as it generally does, a sufficient quantity should be given during the well day — that is, twelve to fifteen grains — to break the disease; and it may be given in any way most convenient to the patient, either in solution, in powder, or in pills. In making a solution, a little Sulphuric Acid should be added, as it causes the Quinine to dissolve much better, and it also seems to exert a beneficial effect upon its action. A very good plan is to add 14 grains of Quinine to 1 ounce of Water, and then 14 drops of Sulphuric Acid, which will cause it to dissolve at once. This quantity is sufficient to break any ordinary case of Fever and Ague, and is to be given in tea-spoonful doses every hour, or every two hours, until it is taken. This is called Dr. Baum's great remedy. (See "Fever and Ague," page 378). It may also be made into pills. One of the best formulas I have ever tried, is as follows: 12 grains of Quinine; 6 grains Ipecac; 3 grains pulverized Opium, and 6 grains Cayenne; make into twelve pills, with a little Extract Boneset, or Extract of either Dogwood, or Gentian, or Dandelion; and take at the rate of one pill every hour during the "well day," until all are taken. Quinine may also be dissolved in some good Whisky or Brandy, in the proportion of 1 dram (or 60 grains) to 4 ounces of the Liquor; to which may be added ½ ounce, each, of strong Essence of Peppermint and Cloves, and taken in doses of a tea-spoonful every hour or two. The ways and forms in which Quinine is given, are almost innumerable; all that is necessary to remember is, that as a remedy to break up the Ague, or Chills and Fever, about twelve grains should be given, in divided doses, in about as many hours; while as a restorative, one or two grains a day are sufficient.

Rag Weed—(*Ambrosia Elatior*).—Known also by the name of Hog Weed and Roman Wormwood. It is a well known weed, very common in all our fields, along roadsides and fences, growing usually about two feet high, with a branching top, with opposite, ragged leaves.

Medical Properties and Uses.—It is astringent and anti-septic; and said to be an infallible remedy in Dysentery, taken freely in decoction made of the leaves. It is a popular domestic remedy in some parts of the country for this disease, and Bowel Complaints generally, and is said never to fail of a cure; to be drank freely in strong tea till a cure is effected. An ointment made by stewing the green leaves in Lard, or in Sweet Cream, is said to be an excellent application for Piles; a decoction is also good as an injection in Leucorrhea and Gleet and as a gargle for Sore Throat. The leaves also make an excellent fomentation for recent Wounds, Injuries, and Inflammations.

Raspberry—(*Rubus Strigosus*).—The Red Raspberry, common throughout the country, grows wild, the same as the Blackberry, usually along old fences, in old fields, and open places in the woods; also cultivated extensively in gardens. It bears a delicious fruit, or berry, and is too well known to need a particular description.

Medical Properties and Uses.—The leaves are the part used as medicine, and those of the red species are considered the best. They are one of the most valuable astringents—to be used in decoction or strong tea, in Looseness of the Bowels, especially in the Summer Complaint. A strong tea of the Raspberry Leaves is also an excellent article, to be drank freely, in painful and profuse Menstruation, and to regulate the Labor Pains of women in Childbirth. It is not a powerful, but a very healthy, pleasant, and valuable astringent, especially in Dysentery and Bowel Complaints of children. A tea is also good to wash and cleanse old Sores, Ulcers, Scalds, and Excoriated or Raw and Irritable Surfaces.

Red Root—(*Ceanothus Americanus*).—Also called New Jersey Tea. It is the well known Red Root of the Western prairies, being a large, hard, woody root, of a dark red color, and having a small bunchy top of shrubby stems, from one to three feet high. It grows plentifully in many places in the West; in barrens, and especially in certain districts in the prairies. The bark of the root is preferred, though the whole root is medicinal.

Medical Properties and Uses.—It is a sedative and astringent expectorant, and regarded by some as a valuable remedy in the early stages of Consumption; also in Hooping-cough, Asthma, Bronchitis, and the like, as well as an excellent astringent in Dysentery and Diarrhea. To be used in decoction, in doses of one or two table-

spoonfuls three times a day, or oftener. A strong decoction is also good to wash out and gargle the mouth and throat in Aphtha Sore Mouth, and in Ulceration and Sore Throat in Scarlet Fever.

Rhatany—(*Krameria Triandra*).—This is a plant which grows in the mountains of Peru, and perhaps some other parts of South America. The root is the part used, and may generally be found in our drug stores, as well as the extract.

Medical Properties and Uses.—It is a powerful astringent, and somewhat tonic. It is used in infusion, tincture, extract, and in substance—and generally where powerful astringents are indicated, as in various Hemorrhages or Bleedings from Internal Organs, in Chronic Diarrhea, Profuse Menstruation, Night Sweats, and Incontinence, or Involuntary Flow of Urine. The tincture is good to apply to Spongy, Bleeding Gums. Dose: of the powder, ten to twenty grains; of the tincture, one to three or four tea-spoonfuls, according to the urgency of the case; of the infusion from half to a teacupful; and of the extract, five to ten grains.

Rhubarb—(*Rheum Palmatum*).—This is the root of a plant cultivated in China, Russia, Turkey, and some other parts of the world, and is now to be found in all our drug stores, as a standard medicine. The best article of Rhubarb comes from Turkey, and is usually in a crude state, though you will generally find Rhubarb in the form of a fine, darkish yellow powder.

Medical Properties and Uses.—Rhubarb is a mild cathartic, and somewhat astringent and tonic also. For diseases of women, children, and all delicate persons, it is an excellent purgative: it is also to be preferred to almost any other purgative medicine in Dysentery and Diarrhea, on account of its tonic and astringent properties. It enters into the popular and well known Neutralizing Cordial of Dr. Beach, a most excellent preparation for Dysentery and the Bowel Complaints of children; also into the Neutralizing Powders. Combined with Leptandrin and Dover's Powders, or the Diaphoretic Powders, it is an admirable remedy in Dysentery and Diarrhea given in "broken," or small doses, sufficient only to act gently on the bowels after several doses have been taken. The dose of Rhubarb as a purgative is from thirty to sixty grains, or from a half to a tea-spoonful; when given in five to ten grain doses two or three times a day, it acts as a tonic and mild laxative.

Rose—(*Rosa Centifolia*).—This is the common Rose—known also as the Hundred-leaved Rose—cultivated in gardens and yards in all parts of the world, as a beautiful ornament, and for its delightful fragrance. There are numerous varieties of the Rose; but the com-

mon pink-colored, or Hundred-leaved variety, is that mostly used in medicine.

Medical Properties and Uses.—The petals or leaves of the flowers are the part used. They are slightly astringent and tonic. Their principal use, however, is in preparing what is known as Rose Water, and the Conserve of Roses; also a very costly and fragrant Oil, known as Otto of Roses, used for making perfumery.

Rose Water is made by adding 8 pounds of fresh Roses to 2 gallons of Water, and then distilling off 1 gallon. It may generally be found at the drug stores, and is used in making Eye Waters, and other lotions, and more for its fragrance than, perhaps, for any other reason.

Conserve of Roses may be made by adding 1 ounce of the dried Rose Leaves, powdered, to 2 ounces of Rose Water, hot, and rubbing well together; then adding 7 ounces of White Sugar and 2 ounces of clarified Honey, and rubbing all together well in a marble mortar, till thoroughly mixed. Used mostly for the purpose of forming pill mass for other medicines. Can always be had at drug stores.

Rose Willow—(*Cornus Sericea*).—Known also by the common names of Swamp Dogwood and Red Willow. It is a shrub or small bush, growing along small streams, in low moist places, and thickets, in all parts of the United States. Its hight is from six to ten feet, leaves pale green, opposite each other; the bark of the stems of a dark green or brownish purple color; flowers small and of a yellowish white color, followed with bunches of small blue berries.

Medical Properties and Uses. — The bark of the root and stalks is the part used, and is tonic and somewhat astringent, and very similar in its properties to the common Dogwood. It is considered a good tonic, strengthening and astringent medicine, and may be used in infusion, decoction, tincture, and in the form of bitters. It is said to be an excellent remedy to relieve the nausea and vomiting of Pregnant females. It is also good as an anti-septic wash for foul and gangrenous Ulcers.

Rosin—(*Resin*, or *Resina*).—This is a common and well known article, sometimes called Rosum. It is the residuum which remains after distilling the Spirits or Oil from the Gum Turpentine of the Pine. It is a hard, brittle substance, of a dark yellowish color, easily melted by heat, and may be found in all drug stores.

Medical Properties and Uses. — Its principal use in medicine is to form plasters and ointments; in plasters, for its adhesive or sticking qualities and drawing, and in ointments and salves, partly for the same, and also for the purpose of hardening or thickening them. It is seldom used internally; though finely powdered and mixed with an

equal quantity of pulverized White Sugar, and taken in half tea-spoonful doses occasionally, it is very good for irritable, hacking Coughs. The vapor or fume arising from burning Rosin is also said to be good, inhaled into the throat and lungs, in Bronchitis, Consumption, and other Affections of the Lungs.

Rue—(*Ruta Graveolens*).—This is the well known garden Rue—a very bitter herb, cultivated very generally in our gardens, for its medical virtues. It is an evergreen, with branching, bushy top, growing from one to two feet high—a sort of half-shrub, the lower part of stalk being woody, while the upper is herbaceous. It is of an intensely and very disagreeable bitter taste.

Medical Properties and Uses.—It is considered a powerful emmenagogue, and also tonic, anthelmintic and anti-spasmodic. The leaves are the part used. Dose: from ten to twenty grains, in powder; of the oil, from two to six drops; decoction, one to two ounces.

Rush—(*Equisetum Hyemale*).—This is the common and well known Scouring Rush, found growing on the banks of water-courses, in wet, swampy grounds, edges of marshes, and the like. It has an erect, dark-green, jointed, hollow and rough, furrowed stem, without leaves, and from one to two feet high.

Medical Properties and Uses.—It is diuretic and astringent; and said to be good in Dropsies, Suppressed Urine, Gravel, and Affections of the Kidneys—to be used freely in decoction or infusion made of the tops or stems. The ashes of the Rush are said to be an excellent article for Sour Stomach and Dyspepsia, better than the ordinary Alkalies, such as Saleratus and Carbonate of Soda—to be taken in doses of five to ten grains, two or three times a day.

Saffron—(*Crocus Sativus*).—Saffron is a well known garden flower, cultivated more or less in the gardens of this country, both as an ornament and for its medicinal properties. The flowers, which are the parts used, are of a beautiful deep yellow or orange color.

Medical Properties and Uses.—It is diaphoretic and emmenagogue; used mostly for children, in the form of a tea or infusion, to produce perspiration, and in cases of Small-pox, Measles, and the like, to produce a determination to the surface. Also useful for females in Dysmenorrhea, Chlorosis, or Green Sickness, Hysteria, etc. It enters into Beach's Sudorific Drops. Used freely in warm infusion; and in tincture in doses of one to two or three tea-spoonfuls. Can always be had at the drug stores.

Sage—(*Salvia Officinalis.*)—Sage is a well known, fragrant, aromatic herb, cultivated in all our kitchen gardens. It is too well known to need any description.

Medical Properties and Uses.—The leaves are the part used; and

beside being highly useful as a culinary herb in certain departments of Cookery, it is one of our most important and valuable medicinal plants. It should be used a great deal more than it is, and certainly would be, if its true properties were more generally known. It is one of our best sudorifics, that is, to produce perspiration without stimulating the system; it is also expectorant, astringent, and somewhat tonic. A warm tea of Sage, drank freely, is an excellent remedy for Colds, Checked Perspiration, Coughs, and as a Cooling and Sweating Drink in Fevers. It is also highly valuable in Sore Throat or Quinsy, to be taken in strong infusion, and the throat frequently gargled with it; in severe cases of Quinsy, and Sore Throat attending Scarlet Fever, and the like, a handful of Sage should be simmered in Hog's Lard, and when sufficiently cool, given in tea-spoonful to table-spoonful doses occasionally, that is, three or four times a day. It acts almost as a specific in such cases. At the same time the neck and throat should be bathed outside with the same; and if you add a little Oil of Sassafras for the external application, it will be all the better. In all cases of Ulcerated Sore Throat and Mouth, Sage is an important article; it should, in such cases, be steeped in Vinegar, and a little Honey, Alum and Borax added; a little Golden Seal Root and Sumach Berries or Bark also, render it still better: to be used freely as a gargle, and occasionally some of it swallowed. If persons in the first stages of many diseases, such as Fevers especially, would drink freely of Warm Sage Tea, go to bed, wrap up well, with perhaps a few Hot Bricks about them, and take a good thorough Sweat, followed, if thought necessary, with a good Vegetable Cathartic, they would succeed in breaking up the disease in most cases at once, and thus save themselves from a great deal of suffering and expense, and perhaps escape more serious and fatal consequences. Every family should keep a good supply of Sage in the house.

Sago—(*Sago Palm*).—Sago is a sort of coarse, granulated powder, or starch, made from the pith of a tree, the *Sago Palm* or *Sagus Rumphii*, which grows in Sumatra, Malacca and adjacent islands, and may be found in drug and grocery stores in this country.

Medical Properties and Uses.—Sago is a nutritive demulcent, is extensively used for making Puddings, and is a useful and very agreeable article of diet for sick persons, in the form of Gruel or Pudding. It is used the same as Tapioca. Sago should be well boiled, until it is thoroughly soft and tender; 1 or 2 table-spoonfuls to 1 pint of Water or Milk, is sufficient, and it may be sweetened with White Sugar and flavored with a little Nutmeg, Cinnamon, or other agreeable aromatic, Wine, and the like. It is an excellent, inoffensive and nutritious diet for sick, delicate or convalescent persons. Is very

much liked by children, and is especially useful in Bowel Complaints. There is an article now manufactured at Oswego, New York, and also near Ottawa, Illinois, where they manufacture Starch from Corn, called "Corn Food"—being a coarse article of Corn Starch, which is regarded as superior to either Sago or Tapioca for Puddings and Diet for the Sick Room, being both more palatable and nutritious.

Saint John's Wort—(*Hypericum Perforatum*).—This is a very common and often troublesome weed to the farmer, growing abundantly in fields. It grows from one to two feet high, with a branching top, numerous small light-green leaves, dotted over with small transparent spots, and topped off with copious bunches of bright yellow flowers, from June to August. The herb emits a strong, peculiar balsamic odor when rubbed; its taste is bitter, balsamic or resinous, and somewhat astringent. The leaves and blossoms are the parts used.

Medical Properties and Uses.—It is diuretic, astringent, and sedative, and used with success in the form of a strong tea, or infusion, in Suppression of the Urine, and in Chronic Affections of the Urinary Organs; also in Diarrhea, Dysentery, Hysteria, Painful Menstruation, Bleeding at the Lungs, and other hemorrhages, especially from the Urinary Organs. Combined with Sage and made into a Syrup, with Honey, it forms an excellent Cough Medicine. The blossoms, macerated in Sweet Oil, by exposure to the sun, in a glass bottle, make an excellent ointment for Sores, Wounds, and Ulcers. A tea of the herb is to be made, the same as from any other herb, and may be used freely.

Sanicle—(*Sanicula Marilandica*).—Known also as Black Snake Root and Indian Sanicle. It is common to the Northern and Middle States, growing in creek bottoms, rich, low woodlands, and thickets, from one to two feet high, with a smooth, furrowed stalk; leaves growing in whorls of five, attached to long slender stems; flowers few, and of a white, or slightly yellowish color; roots small, fibrous and black.

Medical Properties and Uses.—Black Snake Root, or Sanicle, is a tonic nervine; also slightly astringent, diaphoretic, and anodyne. As a nervine it is very similar to Valerian, or the Lady Slipper Root. It is used by the people in the country, in many places, as a remedy for Sore Throat, Croup, Hives, and in Intermittent Fevers; it is also highly recommended in Chorea, or St. Vitus' Dance, as well as in various other Nervous Affections. Said also to be good in Dysentery, Leucorrhea, and passive Hemorrhages. Used mostly in decoction, or strong tea, in doses of half a teacupful three or four times a day. Dose of the powdered root, from half to a dram. It is employed

by the Indians as a certain cure for any kind of Snakebite, for which purpose it is taken freely in decoction, and the wound and parts swollen are at the same time bathed with it. It makes a valuable tea, to be drank freely in all the ordinary Fevers.

Sarsaparilla — (*Smilax Officinalis*). — The Smilax Sarsaparilla is a shrubby, creeping vine, found growing wild in Mexico, South America, and some other parts of the world. There are several varieties of the Sarsaparilla. That which comes from Honduras is thought to be the best, and is mostly in use in this country. The root is the part used, and may generally be found at the drug stores.

Medical Properties and Uses. — Sarsaparilla Root is regarded as a very valuable alterative, purifying the blood and producing changes in the system, without causing any sensible effect in any of the secretions or functions. It has had a great reputation as an alterative medicine, and still has; but it is doubtful if it is much, if any better, than some of our own, such as the Burdock, Stillingia Sylvatica, and common Yellow Parilla of this country. It is used in the form of decoction, or in syrups, generally in combination with other alteratives, in constitutional diseases, such as secondary Syphilis, Scrofula or King's Evil, Skin Diseases, Rheumatism, and in impurities of the blood and all depraved conditions of the system. The dose of the decoction or syrup is from half to a wine-glassful, two or three times a day.

Sassafras — (*Laurus Sassafras*). — Sassafras is a well known tree, common in this country, generally growing on rich uplands, usually from twenty to thirty feet high, but sometimes is found twice that hight, and from a foot to eighteen inches in diameter.

Medical Properties and Uses. — The bark of the root is the part generally used as medicine, though the whole tree — wood, bark, twigs and flowers — is more or less medicinal, and possessed of a pleasant, agreeable flavor. Sassafras is an aromatic, stimulating alterative, and purifier of the blood; also diaphoretic, diuretic, and astringent. A tea made of the root (bark and woody part) is often used as a beverage at the table, and by many is very much liked. It is pleasant, agreeable and healthy, and is especially good to purify the system in the spring of the year. As a medicine, it is generally used in combination with other alteratives, to improve the taste as well as the medicinal virtues, in the form of syrups and decoctions. It is an excellent addition to Alterative Syrups.

Oil of Sassafras. — There is an essential Oil obtained from Sassafras, by distillation, which is often employed with benefit in Liniments, Embrocations, and External Applications; and also used internally with good effect in certain cases, such as Painful Menstruation, in painful Diseases of the Kidneys, and the pains which some

times follow Parturition or Childbirth — given in doses of ten to twenty drops on a little Sugar. It may be combined with other oils and stimulants in all Liniments for Painful Swellings, Sprains, Sore Throat, and the like.

Savin — (*Juniperus Sabina*). — This is an evergreen shrub, or small tree — a species of the cedar — growing from six to fifteen feet high, a native of Europe, but found growing wild in Canada and some portions of our Northern States. The small twigs, leaves, and ends of the branches are the parts used in medicine.

Medical Properties and Uses. — Savin is a powerful emmenagogue and abortive; also diuretic, diaphoretic, and anthelmintic. It is mostly used as an emmenagogue, that is, to bring on the Menses. Care must be taken in using it, especially the Oil (which is mostly used), as in large doses, and continued too long, it is liable to produce serious Inflammation of the Stomach and Bowels.

Oil of Savin. — This is an essential oil, that is obtained by distillation from the Savin Twigs, and on account of the smallness of the dose, is now the form in which it is mostly used. The ordinary dose of the Oil as an emmenagogue, that is, in Suppressed Menses, is six drops, on a little Sugar, two or three times a day. It may be combined with equal parts of Oils Tansy and Pennyroyal, for the same purpose, and given in doses of five to ten drops twice a day. Oil of Savin is much used for the purpose of producing Abortion, in doses of ten to fifteen drops two or three times a day, and is probably the most certain article for that purpose known; but if continued long is apt to occasion Inflammation of the Stomach and Bowels. The leaves are used in substance, in doses of five to ten grains, three times a day; and in infusion of the leaves and twigs in doses of one to two ounces. It is sometimes given along with Pink Root and Senna for Worms.

Scammony — (*Convolvulus Scammonia*). — This plant is a native of Syria, and grows extensively on the chain of mountains extending from Antioch to Mount Lebanon, or the Holy Land. Recently, however, this valuable plant has been discovered growing wild in this country, in the western part of the States of New York and Ohio, and is generally supposed to grow throughout the whole West. The root is the part selected for use.

Medical Properties and Uses. — This is a valuable purgative medicine, and may be compared to the May Apple, which is well known in the country as a purge — not in appearance, but acting on the bowels in the same manner. If required to purge actively, the May Apple may be mixed with it. In people of indolent habits — that is, those who are much bound in their bodies — we find this highly serviceable

as a purge. It relieves the Liver when inactive, or when the Skin is of a yellow appearance; is also excellent for Dropsical patients, and for children who look swollen, indicating Worms. It should be combined with some other article to prevent its griping, such as Coriander Seed, or a small portion of Ginger or Cloves, particularly when it is administered to children. The dose, in powder, is from eight to twenty grains, which may be given two or three times a day. May always be found at the drug stores, in the form of powder.

Seneca Snake Root — (*Polygala Senega*). — This plant, or shrub, grows in various parts of this country. It is a little, crooked, shrubby plant, from ten to fifteen inches high, with small, bright green leaves, one to two inches long, and from a half to three-quarters of an inch wide. The blossoms are few, small, and white, and appear from June till August. It is found mostly in the Southern and Western States. The root, which is the part used, is usually two or three inches long, from a fourth to half an inch in diameter, tapering and irregular in shape, with a sort of ringed protuberance running around it, something like the Ginseng Root. The fresh root has a peculiar, nauseous smell, and somewhat sweetish, mucilaginous taste, soon followed by a pungent, acrid taste, causing an increased flow of the saliva. The central part of the root is hard and woody.

Medical Properties and Uses. — It is a stimulating expectorant and diuretic; also emmenagogue, and, in large doses, emetic and cathartic. It is mostly used for its expectorant properties in Coughs, Colds, and Lung Affections. Considered good in Croup, Asthma, and Chronic Bronchitis. It is also used in Suppressed Menses, in combination with other emmenagogues. It has also been used with success in Dropsy of long standing, in the form of decoction — say 1 ounce of the dry root, boiled in 1 quart of water down to 1 pint, and given in table-spoonful doses, every hour, till all is taken, and to be continued, if necessary — first giving a thorough emetic. Seneca Snake Root is one of the principal ingredients in the celebrated Hive Syrup, which is so much used for Croup. Dose: of the infusion, from half to a wine-glassful; of the tincture, one to three or four tea-spoonfuls; of the powder, from ten to thirty grains.

Senna — (*Cassia Senna*). — This herb is a native of Africa and the countries about the Mediterranean. The leaves are the part used, and may always be had at the drug stores.

Medical Properties and Uses. — Senna is a mild, but very certain and useful cathartic. It has rather an unpleasant taste, and slightly nauseating or sickening effect, if it is given alone; hence it is usually combined with some aromatic, such as Cloves, Ginger, and the like, or with Manna, especially when given to children. It is generally

given in infusion or decoction; about ¼ ounce or 2 drams of Senna Leaves, steeped in 1 teacupful of Boiling Water, with a little Cloves and a tea-spoonful of Cream of Tartar added, forms an excellent purgative in all ordinary cases, and is especially adapted to children and delicate females; the whole of this quantity to be taken at once by a grown person. Senna enters into Beach's Anti-bilious Physic, which is one of the best forms in which it can be used, is one of the best and safest cathartics known, and may be used, under any and all circumstances, by all classes of persons. (See Anti-bilious Physic.) Dose: in powder, thirty to forty grains; of the tincture, two to four table-spoonfuls; of the fluid extract or electuary, about one table-spoonful; of the infusion, from a half to a teacupful.

Sheep Sorrel—(*Oxalis Stricta*).—This is a common and well known little plant, growing in woods and shady places, from six to eighteen inches high, branched, with light-green, round or heart-shaped leaves, in threes, at the ends of the branches, somewhat resembling the small Clover leaves; flowers small and yellow. The herb has a pure, sour, or acid taste, and is quite juicy. There are several varieties of Sorrel; one variety, known as Wood Sorrel (*Oxalis Acetosella*), which is a small plant, without stems, with small, hairy leaf-stalks, from one to four inches long, growing in bunches, the leaves round and somewhat heart-shaped, and of a light green color, with small white flowers; common to Europe and America, and found growing generally in mountainous regions. It is the Irish Shamrock. Another variety (*Oxalis Violacea*), common in the rich soils of the Western prairies, is also without a stem; the leaves being of a dark green, on short leaf-stalks, of a purplish color; flowers light-blue or violet-colored; leaves very juicy and acid.

Medical Properties and Uses.—The properties of each are about the same—being refrigerant or cooling, diuretic, and anti-septic. To be used in infusion, or the fresh leaves bruised and macerated in Cold Water to make a pleasant Acid Drink, like Lemonade; or the leaves may be eaten. It should not be taken in too great a quantity, however, on account of the Oxalic Acid which it contains. It is good as a cooling article in Fevers, and as a diuretic and anti-septic in chronic affections of the Urinary Organs, and in Scurvy. Sorrel is mostly celebrated, however, as a remedy for Cancer, to be used in the form of a plaster made by expressing the juice of the green herb, evaporating it in the sun till of proper consistence, and then applying it to the Cancer, renewing it once or twice a day. It is sometimes mixed with the juice of the Red Clover leaves and heads, and may be thickened with the ashes of White Oak Bark, or any other article desired. It was long kept a secret, as a great Cancer remedy, and has been

known to cure numerous Cancers of the female breast, as well as other kinds.

Skull-cap—(*Scutellaria Lateriflora*).—The Skull-cap is a small herb, from one to two feet high, growing in moist places, in creek bottoms, meadows, and by the edges of ponds. It is also known by the names of Mad-dog, Weed, Hoodwort, and Blue Skull-cap. It has numerous branches, which are opposite each other, small leaves, also opposite, very thin, and small, light blue flowers, which appear in July and August. The root is small, woody or fibrous, and of a yellowish color. The whole plant—leaves, stems and root—is medicinal.

Medical Properties and Uses.—Skull-cap is a valuable tonic nervine and anti-spasmodic. It is especially useful in St. Vitus' Dance, Neuralgia, Convulsions, Delirium Tremens; in Nervous Excitability, Restlessness, Inability to Sleep, and indeed in all Nervous Affections. It is also good in Intermittent and Nervous Fevers. It is to be used freely in infusion, about ½ ounce of the dry herb to 1 pint of Boiling Water. For Nervous and Spasmodic Affections, it is well to combine it with an equal quantity of Lady Slipper Root; and in Fevers, it may be combined with any of the diaphoretic or sweating herbs, as Catnip, Sage, Pennyroyal, or Pleurisy Root. The infusion may be taken either warm or cold. An infusion of Skull-cap, Fever-few and Lady Slipper, equal parts of each, is an excellent remedy for St. Vitus' Dance—about a pint to be taken daily, cold, and continued for several days, or till a cure is effected. The Skull-cap is, by many, considered a specific for the Hydrophobia, or Mad-dog Bite—to be drank freely in strong infusion. It may be obtained at the drug stores.

Skunk Cabbage—(*Ictodes Fœtida*).—This is a rank, offensive-smelling herb, found growing in various parts of the country, in low wet places and swamps. It has large, deep-green leaves, but without any stalk; a number of leaves coming out together from the same root, and resembling somewhat a large Cabbage-head—hence it is sometimes called Swamp Cabbage. It has a large, soft root, with numerous smaller roots around, and going off from the central or main root.

Medical Properties and Uses.—The root is the part used, and is a valuable expectorant and anti-spasmodic. Useful in Coughs, Asthma, Consumption, and all Lung Diseases; also as an anti-spasmodic in Convulsions, Hysterics, Hooping-cough, and in all Spasmodic Affections. As an anti-spasmodic, the pulverized root may be given in doses of thirty grains to a tea-spoonful, repeated according to circumstances, or may be given in tincture in doses of one to two or three tea-spoonfuls. As an expectorant, it may be given in smaller doses, either in powder, in tincture, or in syrup, and is generally best to be

combined with other suitable expectorants. In making the tincture or syrup, the fresh root should be used, as it loses its strength by long keeping and exposure to the atmosphere. The powdered root should be kept in dark or covered bottles, well corked.

Slippery Elm—(*Ulmus Fulva*).—The Slippery Elm is a well known tree, common in most of the States, the inner bark of which is one of the most useful medical agents we have.

Medical Properties and Uses.—The bark of the Slippery Elm is nutritive, demulcent, emollient, expectorant and diuretic. In Inflammation of the Mucous Surfaces, as of the Mouth, Throat, Lungs, Stomach, Bowels, or Urinary Organs, it is a most admirable remedy, to be used freely as a Cold Drink in the form of a thin Mucilage, which is made by soaking a quantity of the bark in Cold Water, or Hot Water, allowing it to become cold. It is especially good in Diarrhea, Dysentery, Sore Throat, Pleurisy, Inflammation of the Bladder, Strangury, Coughs, Bronchitis, and the like. It is so important an article that it may be had at almost any drug store now in a finely ground powder, which is a very convenient form in which to use it, either for mucilage or poultice; though for the purpose of infusion or mucilage, I prefer the fresh bark from the tree; 1 handful of which, bruised a little and allowed to soak over night in ½ gallon of Water, will make enough to last as a drink for several days. As a poultice, for all kinds of local Inflammations, as Wounds, Sores, Scalds and Burns, Ulcers, Swellings, Tumors, Gatherings, and the like, there is, perhaps, nothing within the bounds of medical knowledge equal to the Elm Bark. 1 ounce of the powder, stirred into a little Hot Water, or equal parts of Water and Milk, is sufficient for an ordinary sized poultice; but the fresh bark, pounded soft and covered with Hot Water, then allowed to stand a few hours, and thickened with a little Wheat Bran, makes just as good a poultice as the powdered bark. An injection of Elm Bark infusion is, also, very valuable in Dysentery, or Bloody Flux, Piles, and the like. A little of the powder boiled in Sweet Milk, is an excellent diet for children in Bowel Complaints. The infusion of Elm Bark may be used freely.

Smart Weed—(*Polygonum Punctatum*).—This is a well known herb, growing in nearly all parts of the United States, generally about small streams, ditches, in low, moist grounds, among rubbish in yards, and along roadsides; rising from one to two feet high; having reddish-brown colored, jointed stems; lance-shaped leaves, two to three inches long, and small purplish flowers. It is also known as Water Pepper. It is a very common herb, and known generally by every body. It has an intensely hot, acrid and peppery taste.

Medical Properties and Uses.—Smart Weed is a stimulant,

diaphoretic, diuretic, emmenagogue, and anti-septic, and is a valuable medicine. A strong tincture of the herb is highly recommended in Amenorrhea, or Suppressed Menses, in doses of one or two tea-spoonfuls three times a day; or the hydro-alcoholic extract may be used in doses of three or four grains. A cold infusion of the herb has been used with success in Gravel, and Affections of the Kidneys and Bladder; and a cold infusion of the Herb and Wheat Bran, is said to be an excellent remedy for Bowel Complaints, drank freely. Smart Weed makes an excellent fomentation, along with Hops and other Bitter Herbs, to be applied warm to the abdomen in Inflammation of the Bowels; a strong decoction is good to wash foul and gangrenous Ulcers, and parts tending to Mortification; so is the tincture combined with Tincture of Myrrh. The fresh leaves of Smart Weed and of May Weed, bruised and moistened with Spirits of Turpentine, and applied to the skin, will soon produce a blister, and may be used with advantage in severe Inflammation of the Stomach and Bowels. The Tincture and Extract of Smart Weed should be made of the fresh herb, as it loses some of its strength by age; it is also injured by heat or boiling. To make an infusion, Hot Water should be poured on it, and allowed to macerate till cold. There is a species of the Smart Weed which grows taller than this — usually three or four feet high — the *Polygonum Arifolium*, and known by the common name of Knot-grass and Sickle-grass. It looks very much like the *Polygonum Punctatum*, only larger and taller; grows in low, rich, wet grounds. A cold infusion of this variety is said to be a most powerful and valuable diuretic in Dropsy, Gravel, and all affections of the Urinary Organs; to be drank freely, from a pint to a quart daily.

Solomon's Seal — (*Convalaria Racemosa*). — Solomon's Seal grows from one to three feet high; has a curved or bending stalk, giving it an arched appearance; leaves from three to six inches long, alternate, clasping the stalk, oblong and pointed, larger near the base of the stalk, and growing smaller toward the top; small, greenish-white flowers, hanging under the leaves; followed by pale red, white and purple-speckled berries. There is another species of which the berries are dark-blue or black when ripe. Solomon's Seal grows in rich hill-sides, banks, and the edges of meadows. The root, which is the part used, is soft, somewhat mucilaginous, and of a sweetish taste, slightly bitter. Both varieties are the same in medicinal properties.

Medical Properties and Uses. — A mucilaginous tonic, mildly astringent, and very healing and restorative. Very useful in Female Weakness and Diseases, as in Leucorrhea or Whites, and excessive and painful Menstruation. Also good in Affections of the Lungs, in irritable conditions of the Stomach and Bowels, in Piles, and in Gen-

eral Debility. Used freely in decoction, and in the form of syrup or cordial. It is said that in Erysipelas, and in Poison from the Poison-vine, as well as other Skin Diseases, a decoction of the root drank freely, and the parts bathed with the same, will soon effect a cure.

Spearmint — (*Mentha Viridis*). — Spearmint is very similar in its appearance to the Peppermint herb, growing in similar localities, though confined usually to moist or wet soils. It grows from one to three feet high, has bright-green, oblong, serrated leaves, opposite and pointed. It has a strong, aromatic smell — ranker, more oily, and less pleasant, both in smell and taste, than that of Peppermint.

Medical Properties and Uses.—Spearmint is a valuable diuretic, also diaphoretic, carminative, aromatic, and febrifuge. May be used freely in infusion or tea, in Fevers, and is highly beneficial on account of its cooling effect, its action upon the Skin, Kidneys, and Urinary Organs. As a diuretic, in Affections of the Kidneys, Suppression of Urine, High-colored or Scalding Urine, and the like, it is an excellent remedy, either alone or in combination with Horsemint, Marsh-mallow, Mullein, and the like; to be used freely in infusion, warm or cold. A strong tincture of the green herb, made in good Holland Gin, is also an excellent diuretic in Suppression or Retention of Urine, inactivity of the Kidneys, Gravel, and the like, to be taken in doses of a wine-glassful three or four times a day. A tea of the herb should also be drank at the same time.

Oil of Spearmint, which is made by distilling the fresh herb, is also a fine diuretic, as well as stimulant and anti-spasmodic. Dose: from five to ten drops.

Spice Wood — (*Benzoin Odoriferum*).—This is a common and well known bush, growing plentifully in nearly all parts of the United States, usually from five to ten feet high, in moist, shady places, and is called, also, Spicebush, Wild Allspice, and Feverbush. It has light-greenish flowers early in the spring, and in the fall small berries, which, when ripe, are of a bright red or crimson color, fleshy and spicy, aromatic, containing a hard seed. The whole shrub — wood, leaves, twigs and berries — has a spicy, agreeable, aromatic flavor.

Medical Properties and Uses. — It is tonic, aromatic, stimulant and diaphoretic, and makes an excellent and agreeable tea, to be drank in Fevers, promoting diaphoresis, or sweating, allaying uneasiness, and producing a cooling and exhilarating effect. The bark and twigs are the parts preferred for infusion or decoction, which may be drank freely. The ripe berries, bruised, placed in a glass bottle, a little Sweet Oil added, and allowed to stand in the sun for a few days, then pressed out, forms an excellent oil, to be used as a Liniment for

Bruises, Sprains, Rheumatism, and the like; a saturated tincture of the berries is good for Flatulent Colic, in tea-spoonful doses.

Spikenard — (*Aralia Racemosa*). — Known also by the common name of Spignet and Wild Liquorice. It has a branching, herbaceous stalk, two to four feet high, usually of a dark green or reddish-brown color; the leaf-stems divide into three, each of which usually bears three or more oval-pointed serrate leaves; flowers in July, hanging in umbels, of a yellowish-white color, followed by small red berries, somewhat like the Elder Berries. The root, which is the part used, is soft, fleshy, about the size of a man's finger, long and tapering. Grows in rich, loose soils, and about old rotten logs.

Medical Properties and Uses.—Alterative, expectorant and tonic, and highly valued as a remedy for Female Weakness, Coughs, Consumption, and as a restorative and alterative medicine. Used mostly in the form of Syrup, or in Wine Bitters—generally with other suitable articles. It is considered an excellent substitute for the Sarsaparilla, as an alterative in all Constitutional Diseases, and as an important remedy in Consumption, Breast Complaint, and all Female Complaints. May be used in decoction, syrup, or bitters.

Squill — (*Scilla Maritima*). — This is a very peculiar plant, being a sort of bulb, growing partly above and partly in the ground, giving off from the bulb both roots and leaves, and a flower-stem two to three feet high. It grows spontaneously along the Mediterranean coast, and in some parts of Portugal and France, being confined to the sea-coast. The bulb is the part used in medicine, and may always be had at the drug stores.

Medical Properties and Uses.—Squill is diuretic, expectorant, and sedative, in its proper medicinal doses; but in larger doses, is an irritant emetic and cathartic, and in over doses an irritant poison, producing Inflammation of the Bowels and Urinary Organs. Used almost exclusively for its diuretic and expectorant properties, in Dropsy, Kidney Affections, Inflammation of the Lungs, Asthma, Consumption, Coughs, and for its sedative effects in diminishing the frequency of the pulse in over-action of the heart. It is generally used in the form of Syrup and Vinegar of Squills — both of which preparations may usually be had at the drug stores, and generally in combination with other articles. Equal parts of Wine of Ipecac, Tincture of Lobelia, Vinegar Tincture of Blood Root, and Syrup of Squills, make an excellent Cough preparation, to be taken in tea-spoonful doses, as may be required. The dose of Squill in powder, as a diuretic or expectorant, is one to two grains; of the Syrup or Vinegar, one to two tea-spoonfuls.

Star Root — (*Helonias Dioica*). — Called also Blazing Star, and

sometimes Unicorn Root; though there is another species to which this latter name is more generally given, *Aletris Farinosa;* called also Star Grass, Colic Root, Ague Root, and Crow Corn. It is sometimes difficult to distinguish the two; they are often confounded, and bought and sold for the same. This, however, is of but little consequence, as they both seem to possess about the same properties, and may be used indiscriminately. Star Root (both varieties) is common to the United States, growing in light, sandy soils, barrens, and open woods. It has a naked, upright scape or flower-stem, from ten to twenty inches high, terminating in a spike or tassel of white flowers, which appear in June and July; while the leaves lie close to the ground, around the flower-stalk, in rays, resembling a *star* (from which fact it takes its name), and are from three to eight inches in length, and about an inch in width, in the widest part, lance-shaped, smooth, light-green, and ever green. The root, which is the part used, is small, only from one to three inches long, about the size of the little finger, dark brown color, and hard, rough and wrinkled, with numerous little dark fibrous roots around it.

Medical Properties and Uses. — Star and Unicorn Root is an excellent bitter tonic, expectorant, and diuretic, seems to be peculiarly and specially useful in Female Diseases, or Affections of the Uterus; also exerts a special influence on the Generative Organs, both male and female. In its fresh state, if taken in large doses, it is somewhat emetic and cathartic; but when dried, these properties are lost. It is used mostly by Botanic physicians as a Female Medicine, in affections or inactivity of the Generative Organs, especially in what is called Chlorosis, or Green Sickness (caused from long Suppression of the Menses), and for Dysmenorrhea, or Painful and Excessive Menstruation, Flooding, and Leucorrhea; also as a remedy to prevent threatened Abortion, for which it is said to be almost infallible. It is useful in debilitated conditions of the system, as a tonic and restorative, and as a tonic expectorant in Coughs, Consumption, and Affections of the Lungs; in Dyspepsia, Loss of Appetite, and Hysteria; also in Atony, or Inactivity of the Generative Organs, giving to them tone and vigor, and a healthy action. It is used in powder or in infusion. The dose of the powder is from ten to thirty grains, three times a day, in ordinary cases; in urgent cases, as in Dysmenorrhea, Flooding, and the like, it should be given in doses of half to a tea-spoonful, in a little Hot Water, once an hour or oftener, until several doses are taken. The dose of the infusion is about half a teacupful, repeated according to circumstances; of the hydro-alcoholic extract, or concentrated preparation, from two to four grains.

Stillingia — (*Stillingia Sylvatica*).—This plant is a native of the

Southern States, growing in Pine barrens and light, sandy soils, from the Carolinas to the Mississippi river. It is known by the more common names of Yaw Root, Silver Leaf, Queen's Delight and Cock-up-Hat. It grows two to four feet high. The leaves are alternate, oblong, of a silvery color on the lower side; flowers yellow, arranged on a spike, and appear from April to July. The stalk and leaves, when they are wounded, emit a milky juice, like the common Milk Weed. The root, which is the part used, is large, somewhat like a Parsnep, of a yellowish-brown color outside, and quite hard; inside, yellowish and soft. Has a bitterish, pungent taste, and peculiar oily smell when fresh.

Medical Properties and Uses.—Stillingia is a powerful and very valuable alterative, exerting a decided influence over all the secretions, unequaled, probably, by any other vegetable alterative known. It is also laxative, and in large doses is emetic and cathartic. It is an important remedy in all constitutional diseases, such as Scrofula, or King's Evil, Secondary Syphilis, Cutaneous or Skin Diseases, and Chronic Liver Complaint. It is used in tincture and decoction, but most commonly in the form of syrup; and in the latter case, generally in combination with other alteratives, as Burdock, Yellow Dock, Yellow Parilla, Sassafras, and the like. The Compound Syrup of Stillingia may generally be had at the drug stores. It is also used in the form of an extract. Dose: of the tincture, one to two teaspoonfuls, three or four times a day; of the decoction and syrup, from a half to a wine-glassful; and of the hydro-alcoholic extract, from one to two or three grains.

Stramonium — (*Datura Stramonium*). — Most commonly called Jimson Weed, or Jamestown Weed; also known by the name of Thorn Apple. It is a common, rank, very offensive, stinking weed, growing in great abundance in many places, generally around barns, in front of farm-houses, along roadsides, and in vacant lots and fields that have been trod a good deal by domestic animals. It is too common to need any description, further than to say it has a thick smooth stalk, is usually about three to four feet high, large dark green leaves, a long, white, slightly purplish trumpet-shaped blossom, and bears a large thorny apple or pod, full of black angular seeds, which burst open in the fall, etc.

Medical Properties and Uses.—This is another of the vegetable poisons, and if taken in large doses, will produce serious results, such as extreme Thirst, Vomiting, Choking, Dryness of the Throat, Faintness, Blindness, Delirium, Trembling of the Limbs, Stupor, and sometimes Palsy, Convulsions and Death. In moderate doses, it sometimes produces some of these symptoms in a mild form, such as Headache,

Vertigo or Dizziness, Dimness of the Vision, Confusion of Ideas, and a sort of Intoxication or mild Delirium. It is often and beneficially used instead of Opium, where that article is contra-indicated, acting as an anodyne and anti-spasmodic. It does not constipate the bowels, and is, therefore, in many cases, preferable to Opium. It has been used to allay Neuralgic and Rheumatic Pain, but has been found most serviceable in Epilepsy, Mania, mild Delirium, especially Delirium Tremens; in severe Inflammation of the Stomach and the Bowels, and, in combination with Quinine, it has proved very beneficial in Intermittent Fever, attended with severe Headache and other periodic pains; it has also often proved extremely serviceable in severe Dysmenorrhea. It is generally used in extract, which can always be had at the drug stores under the name of Extract Stramonium—the dose of which is from half a grain to two grains; of the tincture (which is made of the bruised seeds, 2 ounces to 1 pint of Spirits), the dose is from five to twenty drops, and may gradually be increased to thirty. The seeds have long been known to be one of the best agents there is to prevent Abortion or Miscarriage; for this purpose, it is said that seven ripe seeds are to be taken whole, at one dose, where Abortion is threatened, and the dose repeated afterward every six or twelve hours, so long as threatening symptoms continue. Externally, Stramonium is a valuable agent. A poultice of the green leaves, or, if dry, softened with Warm Water, is an admirable application to the Bowels, or Abdomen, in Inflammation of the Stomach, Bowels, and what is called Peritoneal or Abdominal Inflammation; in Inflammation and Pain of the Bladder, from Retention of Urine; and highly valuable to severe, Painful Swellings, Rheumatism, Painful Sores, Swelled and Painful Breasts of females, Inflamed Eyelids, etc. An ointment made by stewing the fresh leaves in Lard is excellent for Piles, for Inflamed Breasts, and all painful Tumors and Swellings. A saturated, that is, strong Tincture of the Seeds, mixed with equal parts of Tincture Lobelia, Vinegar Tincture of Blood Root and Oil of Cedar, is a certain cure for all kinds of Tetter, applied freely two or three times a day.

Strawberry — (*Fragaria Vesca*). — The Strawberry is too well known to need any description, being extensively cultivated in gardens, and also found growing wild in almost all parts of the country. The common wild Strawberry of this country, growing all over our Western prairies, is called the *Fragaria Virginiana;* that found growing on mountains, the *Fragaria Canadensis;* but they are all the same in medical properties—the whole plant and root being used.

Medical Properties and Uses.—Strawberry leaves and roots are an excellent astringent, and useful in Bowel Complaints, especially for

children. A strong decoction or tea may be made of them, or of the leaves alone, and used freely; or a syrup or cordial may be made, either of the Strawberry herb alone, or in combination with other articles, as Cinnamon Bark, Cloves, Allspice, Blackberry Root, and the like. The roots alone are also said to be diuretic. The berry is a very delicious fruit, and to most persons healthy. It is said to be good in Calculous or Gravelly Affections, and that the juice will dissolve and remove the hard concretions which form on the teeth, called "Tartar," without injuring the teeth.

Sumach—(*Rhus Glabrum*).—The common Sumach—also called Smooth Sumach and Upland Sumach—is a shrub, or bush, from five to ten feet high, having numerous, irregular branches, a smooth, dark-gray or reddish bark, lance-shaped leaves, green upon the upper side, and somewhat silvery-colored beneath, about three inches long and one inch wide. In the fall, the leaves usually change to a bright, deep red color. Blossoms of a greenish-red, on spikes, followed by long bunches of hard red berries, covered with a sort of short red down, and are quite acid, astringent, and rather pleasant to the taste. There are several varieties of Sumach, some of which are poisonous; but the *Rhus Glabra*, or common species, may be easily distinguished by the color and acidity of the berries, and their appearance in cone-shaped bunches. When the green leaves are broken, a sort of milky juice exudes; and a sort of gummy substance also exudes from the limbs and stalks, when broken or cut. The Sumach is extensively used in certain districts for making Spiles for tapping the Sugar Maple, and is well known to all Maple Sugar makers, in the North and West.

Medical Properties and Uses.—The bark of the Sumach (that of the root preferred) is astringent, anti-septic and tonic; the berries are astringent, refrigerant, anti-septic and diuretic. A decoction of both the bark and berries, is an excellent wash or gargle for the Aphthous Sore Mouth and Sore Throat, usually combined with Golden Seal, or other astringents, and a little Alum or Borax. A decoction of the bark of the root has been used with advantage in Diarrhea, Dysentery, Leucorrhea, Hectic Fever, and Night Sweats. The powdered bark of the root forms an excellent Poultice, mixed with a little powdered Elm Bark, for old, gangrenous Ulcers. An ointment made by simmering the bark of the root in Lard, is good for Scald-head, and also for Piles. A strong decoction of the bark of the root and White Oak Bark, equal parts, is an excellent injection for Falling of the Womb, Leucorrhea, or Whites, and as a wash for foul or offensive Ulcers. An infusion of the berries is good in Diabetes, or the excessive Flow of Urine, in Bowel Complaints, and as a cooling drink in Fevers; and is extremely serviceable in all cases of Sore Throat and Mouth, whether in Quinsy,

Salivation from Mercury, or ordinary Sore Mouth. The decoction and infusion of Sumach may be used in ordinary doses, of from one to three or four ounces, several times a day.

Summer Savory — (*Satureia Hortensis*).— This is a well known, fragrant garden herb, cultivated usually for Culinary purposes The leaves, which are the part used, have a warm, pleasant, aromatic odor and taste, somewhat similar to Thyme.

Medical Properties and Uses.— Stimulant, diaphoretic, carminative, and emmenagogue. A warm tea of Summer Savory is good in Colds, Flatulent Colic, and to promote the Menses. May be used freely.

Sunflower — (*Helianthus Annuus*).— This is the common and well known Sunflower, cultivated in our gardens and yards as an ornament, on account of its beautiful, bright yellow flowers. It usually grows from six to eight feet high, having a large straight stalk, large leaves, with a border of yellow flowers, in rays, around a large flower-disk, which is often eight or ten inches in diameter, and is filled with the seeds, which, when ripe, are of a dark purple, or black color, about the size of a grain of Corn.

Medical Properties and Uses. — The seeds are the part used; are diuretic and expectorant, and have been used with good effect in Diseases of the Lungs — such as Coughs, Bronchitis and Consumption; also, as a diuretic in Affections of the Kidneys and Urinary Organs. To be used in decoction or syrup, either alone or with other suitable agents, in ordinary doses.

Sweet Fern — (*Comptonia Asplenifolia*).— This is a small shrub, from two to three feet high, and found generally in light, dry, sandy soils, and stony woods. Not very common in the Western States. The main stalk has a dark, rusty bark, the branches being of a dark red, and the young twigs white, covered with a sort of down. The leaves are about three inches long, half an inch wide, lance-shaped, numerous, smooth, green on the uper side, and brown and somewhat downy beneath. When rubbed or bruised, the whole plant gives off an aromatic, spicy odor.

Medical Properties and Uses.—Astringent, tonic, and alterative. The leaves and branches used in decoction, in Diarrhea, Dysentery, and the Bowel Complaints of children; also, Leucorrhea, Bleeding from the Lungs, and as a restorative in recovery from Fevers. May be given in ordinary doses, three or four times a day.

Sweet Gum — (*Liquidambar Styraciflua*).— The Sweet Gum is an ordinary sized tree, common to most of the States, growing usually in moist woods, and level, flat, and clayey lands. It is generally found in al undance where it does grow, and of all sizes, from small saplings

up to large trees. The bark is rough, grayish, somewhat resembling the Red Elm. It is generally well known in the neighborhoods where it grows.

Medical Properties and Uses.—The inner bark of the tree is the part used, and is a most admirable astringent remedy in Bowel Complaints, especially in Dysentery or Bloody Flux, and the Summer Complaint. It is to be used freely, in the form of a strong decoction, either alone, or may be combined with other suitable articles. It may be sweetened with White Sugar; and a little good Brandy may be added, if preferred — though Spirits is seldom good in Dysentery. It may be taken in doses of from a table-spoonful to a teacupful, owing to the age of the patient and strength of the decoction, and repeated according to circumstances.

Tamarac—(*Larix Americana*).—This is a tall, slender, and rather handsome tree, growing throughout the Northern and Northwestern States, in swamps, and low, wet places, and is so well known wherever it grows that a description is unnecessary. It is by some called Black Larch, American Larch, and Hackmetack. It is a species of Pine.

Medical Properties and Uses.—The bark is the part used; it is tonic, diuretic and alterative, and is recommended in Rheumatism, Liver Complaint, Jaundice, and Diarrhea, either in decoction or in bitters. It is an excellent addition to any of the restorative bitters; and in Dropsical cases, combined with Juniper Berries, Spearmint and Elder Bark, tinctured in Gin, is an important remedy. To be used freely and in ordinary doses, in either decoction, tincture, or as bitters. Can generally be had at drug stores.

Tamarinds — (*Tamarindus Indica*). — Tamarinds are the fruit of a large tree which grows in Arabia, Egypt, and the East and West Indies. They are brought to this country in a preserved state, and are sold in drug and grocery stores.

Medical Properties and Uses.—Tamarinds are laxative; that is, mildly cathartic, and refrigerant or cooling. They are used more as a Cooling Drink during Fevers than for any other purpose, in the sick room. A quantity of Tamarinds infused in Water forms a refreshing and very grateful Drink for sick and convalescent persons, suffering from Fevers and the like, while at the same time it tends to keep the Bowels in an open and soluble condition. An infusion of Tamarinds is also a very convenient vehicle in which to give more active cathartics, as Senna, and the like. May be taken at pleasure.

Tannin—(*Acidum Tannicum*)—*Tannic Acid.*—This is a fine, very light, pale yellowish, nearly white powder, obtained by chemical process from Galls, which grow on a certain species of Oak called

Quercus Infectoria, or Gall Oak. It is the same astringent principle, however, which is contained in the common Oak Bark. May be found in the drug stores.

Medical Properties and Uses. — Tannin is a pure and very powerful astringent, useful in Diarrhea, Chronic Dysentery, Uterine and other Hemorrhages; and as an astringent injection in Leucorrhea, Gleet, Gonorrhea, etc. It is a very valuable astringent; but care must be taken not to give too much of it, as it is very powerful, and may produce too great a Constipation of the Bowels. It is well to combine with it a little Rhubarb, Podophyllin, or Leptandrin, or give it along with the Neutralizing Powder or Cordial, in Bowel Complaints, especially in Dysentery. The dose of Tannin is from a half a grain to three or four grains. It dissolves very readily in Water, and may be mixed with any of the decoctions or liquid preparations for Diarrhea and Bowel Complaints. Five or six grains dissolved in 1 ounce of Water, forms an excellent wash and gargle for Sore and Ulcerated Throat and Mouth, severe Salivation, foul Ulcers and the like; and 10 grains, mixed with 1 ounce of Lard, is a good ointment for Sore Nipples, Excoriations, and the like.

Tansy — (*Tanacetum Vulgare*). — Tansy is a common garden herb, native of Europe, but very generally cultivated in this country.

Medical Properties and Uses. — Tansy is diaphoretic, emmenagogue, tonic, and anthelmintic. Given in warm tea or infusion, it promotes Perspiration, and aids in bringing on the Menses, or Courses, in females. It is also a good Worm Medicine, though the Oil is generally used for this purpose. It is a good sub-tonic and stomachic, improving digestion and strengthening the system generally. It is also used as bitters, and enters several valuable compounds used as strengthening and restorative bitters. It also makes a valuable Fomentation, applied warm, to Swellings and Inflammations, and is very beneficial applied to the bowels and lower abdomen in Painful Menstruation.

Oil of Tansy. — There is an essential Oil made from Tansy, which is a good Worm Medicine, and powerful emmenagogue, but should not be taken by pregnant females, as it will produce Abortion, and is considered dangerous. Dose: as Worm Medicine, from two to six drops, on a little Sugar; as an emmenagogue, five to ten drops, three times a day. It may be combined, for this purpose, with equal parts Oils Savin and Pennyroyal.

Tapioca — (*Janipha Manihot*). — Tapioca, as found in our stores and shops, is a coarse starch, in grains near the size of small peas, and is made from the root of an herb which grows in the West Indies and South America, called *Bitter Cassava*. It dissolves readily in

Boiling Water, and, in proper proportions, forms a sort of translucent, tasteless jelly.

Medical Properties and Uses. — Tapioca is demulcent, nutritive, and forms a light, agreeable, and nourishing diet for sick persons. It is a good diet for children while weaning. It is also used extensively for making Puddings. Prepared by boiling a small quantity in Water or Milk, and seasoning it with Lemon Juice, Sugar, Nutmeg, and the like.

Thyme — (*Thymus Vulgaris*). — The common garden Thyme — an aromatic, shrubby herb, very generally and well known.

Medical Properties and Uses. — The leaves are the part used, and are tonic, diaphoretic, emmenagogue, anti-spasmodic, and carminative. It is used in infusion, cold, as a tonic, in Dyspepsia, Weak Stomach, and in recovery from Fevers and other exhausting diseases; and warm in Painful and Suppressed Menses, Hysterics, Flatulent Colic, Cold, Headache, and to produce perspiration. May be taken freely.

The Oil of Thyme is good to apply externally in Neuralgia, Rheumatism, Painful Swellings, and to relieve Toothache; it may be used internally, in doses of from two to ten or fifteen drops, on a little Sugar, in all cases where the infusion might be used.

Toothache Tree — (*Aralia Spinosa*). — Called also Prickly Elder, Southern Prickly Ash, and Angelica-tree. This is a small tree, or bush, found mostly in the Southern and Southwestern States, growing usually from ten to twenty feet high, but sometimes, in the South, attaining the hight of fifty or sixty feet. It is often cultivated as an ornamental tree. It has small, white flowers, which appear from July to September, and small, blackish, juicy berries. The bark, which is the part principally used as medicine, has a peculiar, aromatic odor, and pungent, prickly, bitterish taste.

Medical Properties and Uses. — It is aromatic, stimulant, alterative, diaphoretic, and sialogogue; in large doses, somewhat cathartic and emetic. Its properties, in many respects, are very similar to the Prickly Ash Bark, and it has been used with advantage in Rheumatism, Cholera, Diarrhea, and Cutaneous Diseases, in the form of tincture, or in powder. It is useful as a sialogogue in diseases where the mouth and throat become very dry, and also in Sore Throat. The tincture of both bark and berries is said to be good to relieve the Toothache, by holding it in the mouth and putting it in the decayed tooth. Dose: of the tincture, from one to two tea-spoonfuls; of the decoction, cold, from one to two or three table-spoonfuls; of the bark, in powder, twenty to thirty grains, or half a tea-spoonful.

Turkey Corn — (*Corydalis Formosa*). — This is a beautiful little plant, growing in rich, loose soils, and springing up and flowering very

early in the spring. It grows from six to ten inches high has a small, tender stalk, and small, fine leaves, of a bluish green color; round, bulbous root, about the size of a large pea; from one to three or four of these peas, or bulbs, to a stalk, attached to small roots. They are the part used as medicine, and are solid, rather hard, of a yellowish color and quite bitter. They must be gathered early in the spring, in March and April, as the tops soon decay and disappear. It bears small, reddish-purple flowers.

Medical Properties and Uses.— Corydalis is a powerful and very valuable alterative and tonic. It is regarded by Eclectic physicians as very near a specific in Syphilis, and some other constitutional diseases, where a powerful alterative and tonic are needed. Its tonic properties, however, are probably no better than many other agents we possess, as Gentian, Colombo, Dogwood, Poplar and other bitter tonics; but as an alterative and purifier in Syphilitic and Scrofulous Diseases, it probably has no superior. The only obstacle to its more general use, is the difficulty of procuring it, as the top disappears so soon that there is but a short time, in the early spring, when it can be found. In consequence of this, but little is gathered, and it is generally difficult to find in the drug stores. It is used either in powder or syrup, and in extract and tincture. Dose: of the powder, from five to ten grains, three times a day; of the tincture, one to two tea-spoonfuls; of the extract (a fine powder called *Corydalia*), from half to a grain. In syrup it is generally combined with other articles, as Stillingia, Sarsaparilla, May Apple Root and the like, and given in doses of one to two or three table-spoonfuls.

Turmeric — (*Curcuma Longa*). — Turmeric, as found in the drug stores, is usually in the form of a yellow powder. It is the root of a plant which grows in the East Indies and China.

Medical Properties and Uses.— An aromatic stimulant, though but little used in medicine, except to color Salves and Ointments.

Turpentine — (*Oleum Terebinthinæ*). — Known generally by the common name of Spirits of Turpentine. It is obtained from the Pitch Pine of the Southern States, being distilled from the Gum Turpentine which exudes from those trees. *Oil* and *Spirits* of Turpentine are but different names for the same article.

Medical Properties and Uses.— Turpentine is an irritant and stimulant diuretic; also anthelmintic and cathartic. In large doses it will operate on the Bowels, but more powerfully on the Kidneys and Urinary Organs. In doses of twenty to thirty drops, it acts strongly on the Kidneys, causing a copious flow of Urine. It is a good remedy to dislodge and expel Worms, and may be given to children, for this purpose, in doses of half to a tea-spoonful, in Molasses. For ordinary

Sore Throat, from taking cold, twenty to thirty drops on a little Sugar, and swallowed slowly, is an almost certain cure; it may be repeated once or twice a day. In Dysentery or Flux, a tea-spoonful of Turpentine, mixed with a table-spoonful of Sugar, and taken once or twice a day, is, in many cases, sufficient to cure the disease. It will always be found beneficial. Turpentine is an important ingredient in all internal remedies for Gonorrhea and Gleet. In any obstruction or stoppage of the Urine, its use is generally attended with speedy relief. It penetrates quick, and spreads itself over the whole system. In Bleeding from the Lungs, fifteen or twenty drops on a little Sugar, has been found of great service. It has also been used with great benefit in Chronic Rheumatism, internally; and is a good application, externally, for Swellings. It forms an important ingredient in many of the best liniments. I once saved a girl's life, in Louisville, who was dying from Worms, by giving a table-spoonful, each, of Turpentine and Castor Oil, which caused a discharge of seventy Worms! Spirits of Turpentine is one of the useful medicines, as many persons well know, and should always be kept in the house. The ordinary dose is one drop for each year of the person's age, on a little Sugar; but may be given in doses of a tea-spoonful to one or two table-spoonfuls.

Twin Leaf — (*Jeffersonia Diphylla*). — This plant grows in most of the Middle and Western States, in limestone countries, in rich woods, river bottoms and along streams. It is sometimes called Ground-squirrel Pea and Rheumatism Root. A number of slender, naked, smooth stems, ten to fifteen inches high, rise from the same bunch of roots, each having two large, round leaves, broader than long. The flowers are large and white, and appear in April and May; the root is bunchy, light yellow, somewhat like the Golden Seal, but much coarser, and has an acrid, nauseous, pungent and bitter taste.

Medical Properties and Uses. — The root is the part used, and is alterative, diuretic and hepatic; also somewhat diaphoretic, stimulant and anti-spasmodic. It is used in Chronic Liver Complaint, Rheumatism, Dropsy, Spasms, Cramps, Nervous Affections, and as an alterative in Secondary Syphilis. Also, as a gargle in Sore Throat, and as a wash in old Ulcers. When used as an alterative, it should be combined with other suitable articles, and made into a syrup. Dose: of the decoction, from a fourth to a third of a teacupful, three or four times a day; of the tincture, one to three tea-spoonfuls; of the extract, two to four grains; and of the powder, ten to fifteen grains.

Uva Ursi. — This is a low, evergreen shrub, growing in dry, upland regions, in the northern countries of Europe and America, and called

Bearberry and Upland Cranberry. The leaves are the part used, and may always be found in the drug stores.

Medical Properties and Uses.—Uva Ursi is an astringent diuretic, and somewhat tonic. It is very serviceable in Chronic Diarrhea and Dysentery; in Diabetes, or excessive Flow of Urine; in Profuse Menstruation; and is especially useful in Chronic Affections of the Kidneys and Urinary Organs, as Chronic Gonorrhea, Gleet, Leucorrhea and Incontinence of Urine. Used in either powder or decoction. Dose: of the powder, twenty to sixty grains; of the decoction, which is made by boiling for a few minutes 1 ounce of the leaves in 1 quart of Water, half a teacupful, three or four times a day.

Valerian—(*Valeriana Officinalis*).—Valerian is a large, handsome plant, indigenous to Europe, growing in rich, moist woods, meadows, and along the banks of streams. The root is the part used, and may generally be found in our drug stores.

Medical Properties and Uses. — Valerian is a tonic nervine and anti-spasmodic, and very similar in its properties to the American Valerian, or Lady's Slipper, which may always be used instead of it. It is used in cases of Nervous derangement, especially for nervous females, in hysterical, restless, and irritable conditions, in wakefulness during Fevers, and the like. Dose: of the tincture (which may always be had at the drug stores), one to two tea-spoonfuls, three or four times a day; of the infusion, one to two wine-glassfuls; of the extract, three to six grains; and of the oil, five to six drops.

Vanilla—(*Vanilla Aromatica*). — The Vanilla Bean is the fruit or pod of a climbing, shrubby vine, which grows from the crevices of rocks, on the trunks of trees, and the like, in Mexico, South America and the West Indies. The Vanilla Bean, as found in the shops, is of a dark brown color, from five to eight inches long, and about a third of an inch in diameter, of an agreeable odor, and much used in Perfumery, and to flavor Tinctures, Ointments, Syrups and Ice-cream.

Medical Properties and Uses. — It is an aromatic stimulant, and used sometimes, in doses of eight or ten grains, in low grades of Fevers, Hysterics, and as an aphrodisiac, or excitant of the Generative System, over which it seems to exert a special and powerful influence. It may also be used in infusion—½ ounce of the powdered Bean to 1 pint of Boiling Water—in doses of two or three tablespoonfuls, three times a day. Not much used as medicine.

Velvet Leaf—(*Pareira Brava*).—This is a large, climbing vine, sometimes attaining a large size, covering the tallest trees with its branches and foliage. It is a native of the West Indies and South America. The root is the part used in medicine, and may be found in our drug stores, either in the root or the fluid extract.

Medical Properties and Uses.—It is diuretic, laxative, and tonic Used in Chronic Affections of the Kidneys and Urinary Organs, especially in inflammation of those organs. Also recommended in Gravel, Dropsy, and Leucorrhea. Dose: of the infusion, from a fourth to half a teacupful three times a day; of the fluid extract (the best form to use it), one to two tea-spoonfuls; of the solid extract, five to ten grains.

Venice Turpentine.—This is a thick, viscid liquid, about the consistence of thick Honey, semi-transparent, of a light-yellowish, or slightly greenish color, having a strong Turpentinish smell, and warm, bitterish taste. It is procured from a species of pine called *Abies Larix* or *Larix Europea*. There is a brown or dark-colored article sold for Venice Turpentine, which, however, is a spurious and manufactured article, and should not be used.

Medical Properties and Uses.—Very similar to those of the common Spirits or Oil of Turpentine—a stimulating diuretic, acting powerfully on the Urinary Organs; used in Gleets, Gonorrhea, Leucorrhea, and the like; also, in Ointments and Salves, for its healing properties. When taken internally, the dose is from one to two tea-spoonfuls.

Veratrum—(*Veratrum Viride*).—Known also as American Hellebore, Black Hellebore, and sometimes called Indian Poke and Itch Weed. It grows in many parts of the United States, usually in swamps, low moist grounds, and on the banks of streams, from three to five feet high, bearing yellowish-green flowers, which appear from May till July. The root is the part used, and in the form of tincture and extract, which may always be had at the drug stores.

Medical Properties and Uses.—Black Hellebore, or Veratrum, is a narcotic and acrid emetic, in large doses; but as used in medicine, that is, in small doses, is a powerful arterial sedative, that is, will reduce the action of the heart and frequency of the pulse; also expectorant, diaphoretic, alterative, and nervine. Used in Diseases of the Heart, as Hypertrophy, or Enlargement of the Heart, Habitual Palpitation, Rheumatism, Inflammation, and other affections of that vital organ, wherever there is too great an action or excitement. Also as a valuable expectorant, diaphoretic, and nervine, in Affections of the Lungs, Chronic Pleurisy, and painful Local and Inflammatory Diseases, Spasmodic Affections, Nervous Irritability, Chorea, Epilepsy, Lung Fever, and the like. The best preparation is that called Norwood's Tincture; the dose is about ten drops, three to four times a day, and may be increased a drop or two each day, until double the quantity, or until sickness at the stomach is produced, or the pulse is reduced to about sixty beats to the minute. Should an over dose, or

too much be taken, and unpleasant symptoms produced, the free use of Brandy, with 30 or 40 drops of Laudanum, will soon afford relief, and counteract its effect. It is mostly used in Affections of the Heart, and where there is too great an arterial excitement, and in such cases is a valuable medicine. Highly valuable in Pneumonia, or Lung Fever. Dose: of the powder, three to six grains; of the tincture, ten drops every three to six hours, increased gradually to twenty drops, or more, if necessary; of the alcoholic extract, half a grain, increased to one or two grains.

Vervain — (*Verbena Hastata*). — Called, generally, Vervine, and known also by the name of Wild Hyssop. This is a very common weed, growing along roadsides, in dry, hard ground, along fences, and in old grassy fields. It has a sort of four-square stalk, rises three or four feet high, branching limbs, opposite, lance-shaped, serrated leaves, and small, whitish-blue flowers, appearing throughout the summer, followed by long, slim tassels of seeds. It is easily known, being one of the most common weeds along the sides of roads, and in all beaten places.

Medical Properties and Uses. — The root is the part used, and is tonic, expectorant, and emmenagogue; also somewhat emetic and diaphoretic. It is an excellent emmenagogue — one of the best and safest known — in all cases of Suppressed or Checked Menses; to be used freely in strong decoction, that is, say half a teacupful or more, three or four times a day. It is also a valuable tonic in Fever and Ague, or Chills, either in decoction, in bitters, along with other bitter tonics, or in extract made into pills. The extract forms excellent Ague pills, with Quinine, and a little Cayenne. The warm decoction in large doses will vomit. A decoction of Vervain Root and Boneset Leaves, taken cold in doses of half a wine-glass three or four times a day, is an excellent restorative, after having the Fever and Ague.

Violet — (*Viola Pedata*). — This is the common Blue Violet, called also Bird's-foot Violet; and is a small plant, without stalk, the leaves being lobe-shaped, or nearly round, on slender stems from two to three inches long; flowers blue, or deep purple, and appear early in May, usually. Both the herb and the root are used in medicine.

Medical Properties and Uses. — Mucilaginous, alterative, diuretic, and slightly laxative. Used in infusion in Affections of the Lungs, Coughs, Consumption, and the like, and in Diseases of the Kidneys, and Urinary Organs, where a mucilaginous diuretic is needed. Said to be a powerful Anti-syphilitic remedy, and should be used in combination with other agents, as Stillingia, Corydalis, and the like, in syrup.

Virginia Snake Root—(*Aristolochia Serpentaria*).—Virginia Snake Root is a small herb or plant, growing in rich, shady soils, throughout the United States, from ten to twenty inches high, with a slender, jointed stalk, of a dark reddish or purple color toward the ground, with alternate leaves, oblong, lance-shaped, about three inches in length, and one in width, smooth, and of a light-green color. Flowers of a dull brown, or purplish color, tough, and are attached to short stems, which proceed from the root, so that they usually lie close to the ground, and are sometimes buried in the leaves. The root is small, fibrous, dark-brown, possessed of a rich, aromatic, rather agreeable odor, and warm, bitterish, pungent taste. May be easily known by its gingery, aromatic smell.

Medical Properties and Uses. — The root is the part used, and is a stimulating diaphoretic, diuretic and tonic. Used mostly in warm infusion or tea, as a diaphoretic, that is, to produce perspiration, and a determination to the surface, especially in Fevers and Eruptive Diseases, as Measles, Small-pox, and the like. A cold infusion is good in Dyspepsia, and as a restorative tonic in recovery from Miasmatic Fevers; also good in the form of bitters, along with other bitter tonics. Dose: of the powder, ten to twenty grains, three times a day; of the tincture, one to two tea-spoonfuls; the infusion may be drank freely — warm to sweat, and cold to strengthen.

Water Plantain — (*Plantago Cordata*). — Known also as Heart-leaved Plantain. It has broad, smooth leaves, six or eight inches long, somewhat heart-shaped, on long, smooth, naked stems; flowers small, whitish, and attached to spikes, six or eight inches in length; grows in wet places, along the banks of streams and ponds, throughout most of the States, flowering from April till September.

Medical Properties and Uses. — The root is the part used, and is considered a valuable astringent; also anti-spasmodic and anti-emetic. Used in either decoction or extract, in Diarrhea, Dysentery, and Cholera, in ordinary doses, and said to be an excellent remedy. A poultice made of the root is regarded by some as an excellent application to old Sores and indolent Ulcers.

White Balsam — (*Guaphalium Polycephalum*). — Called also Old Field Balsam, Balsam Weed, Sweet-scented, Life-everlasting, and Indian Balsam. It grows in old fields, and on dry, barren, or poor lands, in various parts of the United States and the Canadas; two to three feet high; stalk erect, whitish, woolly, and branched; leaves alternate, lance-shaped, green on the upper side, whitish and fuzzy beneath; flowers tubular and yellow. The herb has a pleasant, aromatic, and balsamic smell, and slightly bitter, astringent, and rather agreeable taste.

Medical Properties and Uses.—The leaves are the part used, and are astringent, diaphoretic and healing. Used in infusion in Diseases of the Bowels, Lung Diseases, in Sore Mouth and Throat, Leucorrhea, Hemorrhages, or Bleeding from the Lungs, Stomach, and Urinary Organs. The juice of the leaves chewed is good for Sore Mouth. A warm tea of the leaves is good in Quinsy and ordinary Sore Throat; and a fomentation of them is good to apply to old Sores, fresh Wounds, Bruises, Swellings, and the like. May be used freely in tea or infusion. Very good in Dysentery and Disease of the Lungs.

White Oak—(*Quercus Alba*).—The White Oak is a large forest tree, well known throughout the country. The inner bark is the part used.

Medical Properties and Uses.—The bark of the White Oak, as well as that of most of the Oaks, is a powerful astringent and anti-septic; also somewhat tonic. Used mostly in the form of decoction, or syrup, in Diarrhea, Chronic Dysentery, in Hemorrhages or Bleedings, in Night-Sweats; as a gargle in Sore Throat, and for relaxation of the Uvula, or Palate, as it is generally called; also, as a stimulating, astringent wash for old, indolent Ulcers, and astringent injection in Leucorrhea, and Falling of the Womb. A poultice of the powdered bark, mixed with a little powdered Elm Bark, is a valuable application to check Gangrene and Mortification. When prepared for Diarrhea or Dysentery, it should be combined with some aromatics, as Cloves, Cinnamon, Allspice, and the like, and a portion of Rhubarb, or some other laxative, should be added, or a little Leptandrin, or a portion of Castor Oil or of Neutralizing Cordial should be given at the same time, or it might prove too astringent and binding in its effect. Dose: of the decoction, from a fourth to half a teacupful, three to six times a day. Oak Bark is a healthy, pure, and very useful astringent, and may be relied on in most cases where astringents are needed; only be careful and do not give too much, or too strong a preparation, and constipate the bowels too much, especially in Dysentery. The use of Rhubarb, White Walnut Bark, Black Root, or some mild cathartic, along with it, in making the decoction, will prevent any difficulty of this kind, and make it still better for all cases of Bowel Diseases.

White Pond Lily—(*Nymphæa Odorata*).—This article grows in ponds; you will generally see it in great abundance, where it does grow, with large, round, dark-green leaves, floating on the water, and large, white flowers. The root, which is the part used, is large, often as thick as a man's arm, and grows in the mud, or bottom of the pond.

Medical Properties and Uses.—It is astringent, demulcent, and somewhat anodyne; and said to be anti-scrofulous. Used internally in infusion, in Diarrhea, Dysentery, Leucorrhea, Scrofula, and Affections of the Lungs; externally, in the form of poultice, as an application to

Sores, Tumors, Swellings, Scrofulous Ulcers, and the like. The infusion is also good as a wash and gargle for Sore and Ulcerated Mouth and Throat, and for foul Ulcers, and as an injection in Leucorrhea. Dose: of the infusion, from half to a teacupful, three or four times a day.

White Snake Root — (*Eupatorium Aromaticum*).—White Snake Root grows usually from one to two feet high, has rather a rough stalk, branched top, with leaves three to four inches long, and about half as wide, opposite, lance-shaped, and smooth; flowers white, appearing in August and September, and possessing an agreeable, aromatic odor. The root, which is the part used, also has an agreeable aromatic smell, and slightly bitterish taste: it consists of a bunch of small fibrous roots.

Medical Properties and Uses.—It is diaphoretic, expectorant, and anti-spasmodic, and used in strong tea or infusion, in Fevers; is especially useful in Typhoid and Nervous Fevers, and where there is much wakefulness; it is also considered good in Pleurisy, Lung Fever, Hysteria, and Gravel. It may be taken rather freely, in infusion, or decoction, and may be used either alone, or in combination with other diaphoretic agents.

White Turpentine.—This is a gummy substance, of a whitish color, and is the concrete juice obtained from a species of the Pine known as the Yellow Pitch Pine (*Pinus Palustris*), and may generally be found in the drug stores. It is generally hard, or but slightly soft and yielding, growing harder by exposure to the atmosphere, and is readily dissolved by Alcohol or Spirits.

Medical Properties and Uses. — Its properties are about the same as of the other forms of Turpentine, viz.: stimulant, diuretic, anthelmintic and anti-septic, and in large doses cathartic. Used internally in doses of twenty grains to a dram, in Affections of the Kidneys, Weak Back, Diseases of the Urinary Organs, Gleet, Leucorrhea, Rheumatism, Ulceration of the Bowels, Suppressed Menses, and the like; and externally as a strengthening plaster, in combination with other articles, and as an ingredient in various plasters and ointments.

Whortleberry — (*Vaccinium*).—This is the well known Huckleberry, growing plentifully in the Northern States, and northern portions of the Middle and Western States. The berry is an excellent fruit to eat, very much resembling in taste the Blackberry, and is also medicinal. There are several varieties of the Whortleberry, the Blue and the Black being the most common. They all possess the same properties, however.

Medical Properties and Uses.—The root is the part generally used as medicine, and is both diuretic and astringent. A decoction of the root is a good astringent remedy in Diarrhea and Bowel Diseases,

used the same as the Blackberry Root; also good as a gargle and wash for Sore Throat and Mouth, and for old indolent Ulcers. The root and berries, bruised and tinctured in Gin, are a good diuretic, and seldom fail to relieve Gravelly and Dropsical Affections; to be drank freely, or as much as the stomach and head will bear.

Wild Cherry—(*Prunus Virginiana*).—The Wild Cherry-tree is found in great abundance throughout the United States, and is too well known to need description.

Medical Properties and Uses.—The bark is the part used, and is tonic, slightly astringent, anodyne and expectorant. It is an excellent bitter tonic, useful along with other articles, as Poplar and Dogwood Barks, Gentian and the like, as restorative bitters; also good along with astringents in Bowel Diseases, and with suitable expectorants in Affections of the Lungs. It should not be boiled, as it destroys, to a great extent, its virtue. An infusion may be made by adding 1 pint of Hot Water to 1 ounce of the powdered Bark, and let stand over night, when it will be ready for use, or may then be made into syrup. Used mostly in the form of bitters, along with other articles. Dose: of the infusion, half to a wine-glassful three times a day; the same of the bitters.

Wild Ginger—(*Asarum Canadense*).—Called also Colt's-foot and Indian Ginger. Wild Ginger has broad, round, pale-green leaves, three to four inches in diameter, something in the shape of a colt's foot, on short stems, with long, creeping, yellowish, jointed roots, about half as thick as the little finger, possessing a strong, rich, agreeable, aromatic, gingery smell, and slightly bitter, aromatic taste. It is common in most of the States, growing in rich, loose soils, in thickets, hill-sides, about old logs, and along fences. The root is the part used.

Medical Properties and Uses.—It is stimulant, diaphoretic, expectorant and emmenagogue. Used in warm infusion or tea, as a diaphoretic or sweating medicine, in Colds, Suppressed Menses, Colic, and Affections of the Lungs. It is a powerful emmenagogue; and if used in strong decoction, in large doses, it will produce Abortion. There is no danger of this, however, if used in moderate quantities in infusion. May be used wherever a good diaphoretic or sweating tea is needed, either alone or combined with the Composition Powders, or other diaphoretic. Dose: of the powder, half to a tea-spoonful; of the tincture, one to two tea-spoonfuls; of the infusion, half to a teacupful or more.

Wild Indigo—(*Baptisia Tinctoria*).—Called also Rattle Bush, Indigo Broom, Indigo Weed, Prairie Indigo, etc. It is a common weed, especially in the Western States, growing usually about two

feet high, with a large, smooth stalk, divided into several branches at the top; leaves small, alternate, smooth, oval-shaped, and of a bluish-green color; flowers white, attached to small spikes at the ends of the branches, followed by oblong pods, from an inch to an inch and a half or more in length, and about half as thick, containing seeds, which become loose in the pods when dry or ripe, and rattle—hence the name of Rattle Bush. The whole plant turns dark-blue or black in the fall. It is very common along the edges of the prairies in the West, around thickets, in barrens, and the like.

Medical Properties and Uses.—The root is the part used, and is considered a valuable anti-septic, that is, to prevent Gangrene and Mortification. It is also somewhat astringent, and in large doses emetic and cathartic. It is mostly used, however, on account of its anti-septic properties, both externally and internally. A decoction of the root, or rather bark, of the root, is an excellent wash and gargle for all kinds of Ulcers, old Sores, Wounds in which there is a tendency to Gangrene or Mortification, Ulcerated Sore Throat, Mercurial and Aphthous Sore Mouth, Syphilitic Sores and Ulcers, Sore Nipples, and the like; a strong decoction, thickened with powdered Elm Bark, is an excellent poultice, also, for all sorts of gangrenous and indolent old Sores, and for Wounds tending to Mortification. A decoction is also good as an injection in fetid Leucorrhea, and wherever an anti-septic, cleansing and healing remedy is needed. Internally it may be used with advantage, in the form of syrup or decoction, in all cases of Putrid Diseases, as in low, Typhoid Fevers, Malignant Scarlet Fever, Inflammation of the Bowels, with a tendency to Mortification, and the like. Dose: of the decoction, about a table-spoonful every hour or two, according to circumstances; of the tincture, a tea-spoonful; and of the alcoholic extract, one to two grains. Should it produce nausea and disagreeable symptoms, the dose must be lessened.

Wild Ipecacuanha—(*Euphorbia Ipecacuanha*).—Also called American Ipecac and Spurge. It is a native plant, growing in the Middle, Southern and Western States, in shady woods, and dry, sandy soils. It grows in thick bunches usually, but a few inches high, with small leaves, from one to two inches long, and half to three-quarters of an inch broad, opposite, smooth, and of an oblong, oval shape. The root, which is the part used, is long, irregular, often extending several feet into the ground.

Medical Properties and Uses.—It is diaphoretic, diuretic, expectorant, emmenagogue, and emetic; used with success in Dropsy, and also for Suppressed Menses. Used in powder, the dose being ten to fifteen grains three or four times a day, in Dropsy, and as an emmenagogue; three to six grains as a diaphoretic and expectorant, three to

six times a day. It is said to be a speedy and certain remedy for Bilious Colic, in doses of ten to fifteen grains, repeated every half-hour till relief is obtained.

Wild Potato—(*Convolvulus Panduratus*).—Called also Wild Morning-glory, Wild Jalap, and Man-in-the-ground. It has a climbing stem or vine, leaves nearly round, two to three inches in diameter, flowers white, purplish toward the base, funnel-shaped, like the Morning-glory, open in the morning, and closing in the afternoon. The root is large, like a Sweet Potato, often several feet in length, and three or four inches in diameter, and when fresh possessed of a milky juice. Grows usually in loose, sandy soils, in old fields, the edges of thickets, and the like.

Medical Properties and Uses. — The root is the part used, and is diuretic and mildly cathartic. Used in tincture or infusion, in Dropsy, Gravelly Affections, and diseases of the Kidneys and Urinary Organs. Dose: of the infusion, about a wine-glassful every two or three hours; of the tincture, two or three tea-spoonfuls. It should be tinctured in good Holland Gin.

Winter-green—(*Gaultheria Procumbens*).—This is a small shrubby evergreen, known in different parts of the country by the names of Mountain Tea, Partridge Berry, Deer Berry, and Pipsissewa. It is found only in mountainous districts, dry barrens, and poor, sandy regions. It has a creeping root, sending up a few slender, reddish stems, but a few inches in hight, which contain a bunch of leaves at the top, and a few whitish flowers, followed by little scarlet-red berries.

Medical Properties and Uses.— The leaves are the part used, and are aromatic, astringent, diuretic, emmenagogue and stimulant. Used in infusion or tea in Chronic Diarrhea and Dysentery, Stoppage of the Urine, and in Suppressed Menses. The principal use of Winter-green, however, is in the manufacture of an essential Oil, by distillation of the herb, which is extensively employed for the purpose of flavoring Syrups, Mixtures, and Medical Compounds. The infusion of the herb may be used freely.

Witch Hazel — (*Hamamelis Virginiana*). — Known also in some places as Winter-bloom, Spotted Alder, and Snapping Hazelnut. It is a small, crooked bush, from five to ten feet high, with smooth, grayish bark; leaves alternate, oval-shaped, three to five inches long, with numerous raised spots on the under side; flowers small and yellow, appearing late in the fall, followed by small capsules or pods, each containing two oblong, black seeds. Witch Hazel is found growing in most of the States, generally on the sides of hills, mountains, and near stony banks and by the sides of streams.

Medical Properties and Uses.—Both the bark and the leaves are used in medicine, and are astringent, tonic, and sedative. Used mostly in decoction, which is good as an astringent in Diarrhœa, Dysentery, and in Bleedings from the Lungs, Stomach, and Urinary Organs, taken freely internally; as a wash to old and foul Ulcers; as an injection in Leucorrhea, Flooding, and Falling of the Womb, and as a gargle and wash in Sore Mouth and Throat. Dose: of the decoction, from half to a teacupful three or four times a day. This decoction should be made with two ounces of bark to a quart of water.

By distilling 10 parts of this bark in a mixture of 90 parts of water with 10 parts of alcohol you will have secured an extract similar to and as useful as the well known and justly celebrated *Pond's Extract.*

Wormwood — (*Artemisia Absinthium*). — Wormwood is an herb cultivated in our gardens, very bitter and unpleasant to the taste, but, in many cases, a very good medicine. The herb is the part used.

Medical Properties and Uses.— It is a stimulant tonic and anthelmintic. Good for Worms, and, in moderate doses, promotes the appetite, strengthens the digestive organs, and the whole system. Used in Dyspepsia, Intermittent Fever, Suppressed Menses, and Chronic Diarrhea. Dose: of the powdered leaves, ten to twenty grains; of the infusion, half to a wine-glassful two or three times a day.

Yam Root—(*Dioscorea Villosa*).—Called also Colic Root and Wild Yam. This is a sort of climbing, twining vine, common to this country, but growing more abundantly in the Southern States. The leaves are about three to four inches long, about half as wide, ovate, and mostly alternate; flowers very small, light yellowish-green color, and appear in June and July. The root is the part used, and may generally be found at the drug stores.

Medical Ppoperties and Uses.— It is anti-spasmodic, diaphoretic, and expectorant, and is regarded as a specific and very certain remedy for Bilious and Cramp Colic. To be used in decoction, in doses of half to a teacupful every half-hour or hour, till relief is obtained. 1 ounce of the powdered Root may be steeped in 1 quart of Boiling Water. It is probably the best remedy known for Cramp Colic. The tincture is sometimes used. Dose: from half to a tea-spoonful.

Yarrow — (*Achillea Millefolium*).— Sometimes called Milfoil. It is a small herb, from ten to twenty inches high, with a branching top; grows in fields, pastures, and woods, and possesses a feeble, but rather pleasant aromatic odor, and bitter, pungent taste.

Medical Properties and Uses. — The herb is the part used; is tonic, alterative, and astringent; useful in tea, or infusion, in Spitting of Blood, Bleeding from the Lungs, from the Urinary Organs, in Leucorrhea, Diabetes, Bleeding Piles, and Dysentery. Dose: of the infusion, from a gill to half a pint three or four times a day; of the tincture, two to four tea-spoonfuls; of the oil, ten to twenty drops.

Yellow Dock — (*Rumex Crispus*)— Yellow Dock, known also by the names of Sour Dock, Narrow Dock, and Curled Dock, is a com-

mon herb, growing in grass-plats, meadows, and waste grounds, from two to three feet high, with long, slender, crisped-edged leaves, and a long, slender, spindle-shaped, yellowish root. The green leaves and stalks are slightly sour to the taste.

Medical Properties and Uses. — The root is the part used, and is alterative, tonic, detergent, or purifying, and somewhat astringent. It is an important and valuable alterative in such constitutional diseases as Scrofula, Syphilis, Scurvy, Cancerous Affections, Leprosy, Itch, Tetter, and similar Cutaneous Diseases; to be used in decoction or syrup, either alone or in combination with other alteratives. Dose: of the decoction or syrup, a wine-glassful three times a day. The fresh leaves, bruised and simmered in Sweet Cream, Fresh Butter, or Lard, make a good Ointment for Scrofulous Ulcers, Scrofulous Sore Eyes, Glandular Swellings, and, it is said, will cure the Itch.

Yellow Parilla — (*Menispermum Canadense*). — Known also by the names of Sarsaparilla, Vine Maple, and Moon Seed. It is a smooth, climbing vine, about half as large as the little finger, and extending to the length of twelve or fifteen feet, twining itself around saplings and bushes, with smooth, dark-green, and nearly round leaves, and a long, woody, and bright-yellow root, which is very bitter. It grows in rich bottom lands, and is common throughout the United States.

Medical Properties and Uses. — The root is the part used; is tonic, alterative, diuretic, and laxative; and, in very large doses, cathartic and emetic. It is an excellent laxative, bitter tonic, and alterative, useful in all cases where an alterative and restorative is needed; good in Scrofulous and Skin Diseases, in Constitutional Syphilis, Rheumatism, Mercurial Diseases, and the like, as an alterative; and in Dyspepsia, General Debility, and convalescence from the Fever and Ague, as a tonic restorative. May be used in the form of bitters, decoction, or syrup, and should form a constituent in all alterative syrups. Dose: of decoction or syrup, from a half to a wine-glass three or four times a day; of the extract, three to six grains; and of the tincture, one to two table-spoonfuls.

VEGETABLE MEDICINES;

HOW AND WHEN TO COLLECT THEM.

Barks. — When the sap is running in the tree, so that the bark may be easily stripped from it, is the time for you to obtain what barks may be needed for family use; or for sale, if you desire them. After shaving off the outer portion, or rough part, the bark may be cut thinly and placed in a good position in the shade to dry.

Roots. — After the leaves are dead in the fall, or *better* in the spring before the sap rises, are the times to collect roots.

Seeds and Flowers. — These should be gathered and put in the shade to dry, only when they are fully ripe. When dried, they should be put in a nice, dry place, and thus may be kept for several years.

Medicinal Plants. — To secure them in the greatest perfection, for medical use, they should be taken while in blossom, and carefully dried in the shade; but they may be gathered at any period before frost comes.

HEALTHY HUMAN LIFE AS POWER.

WHEN Franklin said, "Public health is public wealth,' and when the latter word in *commonwealth* was made to stand for the weal of all society, there was a union of terms which are allied in thought not less than in language.

It is not merely that our highest conceptions of blessing must be expressed by physical conditions or by our highest estimation of some physical benefit. Before mankind began to analyze the fulness of one's self, it really included the intellectual, the spiritual, the social. It meant such harmonious adjustment and relation as did not necessitate a division into that which we now call material, mental, and spiritual. It applied that very word wholeness or complete soundness to express them all, and made *it* a perfect synonym for all that manliness and womanliness mean in appearance, speech, and behavior. Health stands today, whether we will or not, as a great generic thing, which means more than the world has yet begun to feel. However ready the assent to its value may be, it is too often without adequate appreciation or comprehension of what it means for society. To the individual, and not less to men and women in their associate capacity, it is the greatest inheritance. Old age itself has, as one of its honors, the fact that it is a kind of testimony that health has been the property of ancestry, and a partial pledge that the gift is now handed down unimpaired to the coming generation. Since that is the only hope of perpetuity, to the state it is more than personal, filial, or parental; it is patriotic.

If we were only after material resources, we could claim health as the greatest capital of the world. Pour out the gold from the mines, cover the seas and the rivers with ships and steamers, let the land wave its plumage of grasses and its thousands of miles of wheat fields. What are these as wealth, as material prosperity, unless there is power in the race—power that must be physical if it shall be intellectual, moral, and social? It is high time that social and political science put a worthy and more deliberate estimate upon the material value of hygienic science and art. How we glow into enthusiasm over the great forces of Nature, as they are subjected to the uses of the world, and made to work in engines and batteries for the productive energies of progress. How we exult over the untold wealth of mines, over the richness of boundless prairies, and all the largess which mountain and valley, shore and sea, are pouring into the lap of Columbia's renown. But what are all these, even as an estimate of material wealth, in compare with the question, What is the yield of men, women, and children which American civilization is furnishing? What are the physical forces resident in the aggregate population of the United States? Orators may well point you to all the triumphs of machinery and art, to what this age has wrought out of the metals, and how iron has become the tough elastic which spans the bays, and with its fairy cords entwines the brows of island cities. But, behind all other forces, aye, more than yet is told behind the exerted moral and intellectual forces of the world, is the physical force of hearty, wholesome life—itself moral and reaching out to the Divine—when the exquisite adjustment which God himself has designed between man, the masterpiece, and the rest of Nature is thoroughly appreciated and maintained.

Here is the wealth of the country. When we are looking for the "physical apparatus of civilization" we must not overlook the people. The people—this is the strength, this is the power. I do not need to show how this physical vigor

and its sustenance are indispensable to strength, success, and perpetuity. All history tells us of physical degradation as the forerunner of national collapse. "Rome," says the historian, "perished for the want of men." The statesman, the publicist, the social economist, the moralist, the Christian patriot, must look to the physical stamina of the woman and the man, not as always tall or always broad, but always, whether nightingale or eagle, in adjustment with its own parts and with its surroundings. It is human beings, carrying with them human health, that are wanted more than all the resources of earth, air, or sea. Nor was there ever a time in history when health had such risks and so much needed social science to deal with it as a factor. There is no ancient counterpart. Life is more artificial, more gregarious, more packed, and the compensations and adjustments cannot be trusted to any natural laws. How to choose a proper locality, how to drain land, how to build a healthy house, how to feed, air, and clothe the inmates, how to remove all *débris* beyond the reach of those who cannot appropriate it with the same advantage as can the grasses and grains, these are known as definitely as most facts in science and most of the experiences of applied art. Yet the threatening fact remains, that the breach of sanitary law is constant, is progressive, and that social economy ought to attack it with all vehemence and decision.

For all effort at improving the condition of society, by looking after the welfare of households, there are great encouragements not to be overlooked. The science of right living is known better than the art is practised. Laboratory men, engineers, and physicians have done better than they are credited with. The trouble is that the average intelligence of the people or popular knowledge has not kept pace. The fact is, life, with all our talk about it, has not a very high value on this American continent. We know of a man who complained of his medical attendant as to his bill, and when he said, My charge is low enough for that of a cattle doctor, said "it ought to be lower, for my cattle have a money value, but my children have not." Disease or invalidity in some of its forms is the background of illiteracy, of pauperism, of crime, of race degeneracy, in many ways to a degree not recognized. Ill-health is largely preventable. Sanitary science in its prevision does not build an annex to other temples. If it is anything it is a corner-stone. It is fundamental rather than ornamental. It is not made up of a few contributed pieces for a mosaic, but is integral to the very essence of progress and to all that sociology means. It boldly comes forward as a chief necessity, and says that if we would improve society, we must improve health.—*Ezra M. Hunt, M.D.,*

HUMAN DISEASES AND THEIR DIFFUSION.

AS a general rule, the human body furnishes, I believe, all the poisons that the human body suffers from, that is to say, ordinary secretions may change and become poisons without previous infection. This is the opinion of B. W. Richardson, M.D., LL.D., F.R.S., and then he goes on to remark: "If it be true that the air around us is charged with invisible germs, which come from whence we know not, which have unlimited power to fertilize, which need never cease to multiply, what hope is there for the skill of man to overcome these hidden foes? Why may not a plague spread over the world on some occasion, and destroy life universally?

"The nervous hypothesis presents a different aspect. It says to living men and women: 'You are the producers of these communicable diseases, or if not you, it is one of your lower earthmates, some domestic animal, that shares with you the power of producing a poisonous secretion, and of giving a hereditary stamp of production to such poisonous product:' and recognizing this fact, it suggests at once that the danger is all but limited to the person affected. Isolate that person from the rest of mankind, take care that his secretions—volatile, fluid or solid—do not come in contact with the secretions of susceptible, healthy persons, and the danger is over. * * If this be true, we sanitarians have complete mastery over the diffusion of the poisons of all the communicable diseases."

ANATOMY, PHYSIOLOGY,

AND THE

LAWS OF HEALTH.

BY

JOHNSON H. JORDAN, M.D.,

PHYSICIAN TO THE CINCINNATI CHOLERA HOSPITAL IN 1849.

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ANATOMY AND PHYSIOLOGY.

PRELIMINARY REMARKS.

ANATOMY comprehends a knowledge simply of the structure of the human body and of its various organs. It takes up and examines the different parts of the body separately, as you would examine the various parts of a complicated machine, and acquaints us with the situation, form, and character of each, in the general economy.

PHYSIOLOGY shows us the functions and uses of the different parts and organs of the system; it examines the machine *while in motion*, and explains the various processes by which it is sustained, replenished, and made to grow, live and act — as Digestion, Nutrition, Circulation of the Blood, and all those phenomena which go to constitute Life and Health. In short, Physiology is the Science of Life.

There are few studies more interesting than Physiology, and none more necessary for all classes. A knowledge of the Laws of Life and Health is of vastly more importance to a young man or young woman than all the French, Music, and Drawing accomplishments taught at the most popular Boarding Schools; or all the Latin, Greek, and Hebrew to be learned at Yale College or Oxford University. Of what value are all the more fashionable accomplishments without health? I say nothing against these things. The attainment of knowledge is commendable in any one, and the embellishments of polite literature and a refined education are always desirable, when they can be had without too great a sacrifice. But they should not be allowed to engross the whole mind to the exclusion of knowledge which has so much more important a bearing on the happiness of our race; for I need hardly say that without health, there can be no real happiness.

It is well to be able to read French, and to paint, and draw, and play on the piano; but it is better to know how to preserve one's health, and when lost, how to regain it, and then how to keep it. It is well to be versed in ancient lore, and to be able to read *Homer's Iliad* and *Cæsar's Commentaries* in their original languages; but it is

far better to know ourselves, to understand the laws of our physical being, and the relation we bear to things around us. In the present state of civilized society, with its Fashions, Luxuries, Vices, and its varied styles of Cookery — all more or less filled with the seeds of Disease and Death ; and surrounded, as we are, on every hand with Temptation in its thousand luring forms — it is next to impossible to pass through life and enjoy any thing like a reasonable share of health, without a thorough knowledge of the Laws of Life, and of the penalties which God has annexed to their violation. Until recently no department of knowledge has been more neglected than this. But at length a new era has begun to dawn upon our country. Books on Anatomy, Physiology and Hygiene have been prepared for families and schools, and commendable efforts are being made to supply the masses with this most necessary information. The public mind is becoming awakened to the importance of the subject, and well it may. It is a fact so palpable that all should see that mortality and disease are rapidly on the increase, especially among the wealthier classes ; each generation becoming more effeminate, sickly, and short-lived than the one which preceded it. It is an alarming fact that the average duration of human life at the present day, in this and other highly civilized countries, is nearly or quite one-fourth less than it was one or two centuries ago. Why is this ? There must be some cause for this degeneracy. Is it not high time that we begin to seek out this cause, and the means for its removal ? It is sometimes said that the people of each generation grow wiser and shorter-lived than their predecessors, as though the latter was the necessary result of the other. We grow foolishly wise in some things, I admit — more ready in devising means and ways and facilities for producing disease and death. In these things we are apt and progressive. But we do not make adequate progress in that knowledge which is the only true remedy against these evils. While the causes of disease, to be found in our luxurious habits and manner of living, are rapidly on the increase, the means of preserving health and life have been largely overlooked. Hence the alarming degeneracy of the species, and the increase of mortality and disease. The only hope for the physical redemption of our race is in a wide-spread, practical knowledge of ourselves as organized beings — a thorough acquaintance with the philosophy of Existence, the Laws of Health, and the causes which tend to Disease and Premature Death. Let Physiology and Hygiene be taught at home and in all our schools ; let every family be provided with practical works on these subjects, and both young and old study them well, and endeavor to live in accordance with the truths they teach — and then there will be some prospect of arresting the downward tendency of the race, and hope of a return to that

state of health enjoyed when our grandmothers were little girls, which we read about, but of which their grandchildren know but little, and perhaps care less while they are able to enjoy luxurious ease.

We do most earnestly urge Parents who purchase this book, at least to read over carefully and frequently the accompanying chapter on "*Physiology and the Laws of Health*," and have their children do likewise, or, better, *study it*, until each and all shall thoroughly appreciate and understand the laws which control our physical well being.

A knowledge of Anatomy, except to the operative Surgeon, is not so important; yet an acquaintance with its outlines, at least, is necessarily connected with the study of Physiology, and can not be dispensed with. Hence I shall proceed first to give a brief but concise view of the Anatomy of the human system. After which the Physiology of the principal processes and functions of animal life will be given in detail, accompanied with practical observations on Hygiene, or the Laws of Health.

ANATOMY.

THE human organism is divided into *Bones*, *Muscles*, *Arteries*, *Veins*, *Nerves*, *Viscera*, or Internal Organs.

The body, in its description, is divided into the *head*, *trunk*, and *upper* and *lower extremities*. The trunk is also divided into *chest* and *abdomen*.

THE OSSEOUS OR BONY SYSTEM.

THE bones are the hardest and most solid parts, and are designed as a frame-work or foundation for the attachment and support of the softer parts, to give form and symmetry to the body, and for the purposes of motion and locomotion. When connected together in their natural order, they form what is called the *skeleton*.

The round bones are generally tubular, and the hollow is filled with a medullary substance called marrow, except at the ends or joints, where, instead of being hollow, they are usually enlarged, forming a kind of *head*, which consists of a sort of *net-work* structure, somewhat resembling honeycomb. The flat bones, as those of the *skull* and *scapulæ*, or shoulder-blades, consist of two thin tables, or plates, united by the same kind of net-work structure.

Like all other parts of the body (except the nails and hair), the bones are supplied with bloodvessels and nerves; and in their healthy

state contain but little or no sensibility. But when in a state of inflammation, they are extremely sensitive and painful. The bones are covered with a very firm, thin, and closely attached membrane called the *periosteum*. Where this membrane covers the skull, or cranium, it is called *pericranium*.

The number of bones in the human body, including the teeth, is two hundred and forty, proper; though sometimes there are found in the thumbs and great toes what are called the *sesamoid* bones, increasing the number to two hundred and forty-eight. The head (including the thirty-two teeth) contains sixty-three bones; the trunk, fifty-three; the upper extremities, or arms, sixty-four; and the lower extremities, sixty.

These bones are composed of both earthy and animal matter. The earthy portion, which is mainly the *carbonate and phosphate of lime*, gives them their solidity and strength; while the animal portion, which is mostly *gelatin*, gives to them vitality, and prevents them from being too brittle. If you will calcine a bone—in other words, burn it in a clear fire for ten or fifteen minutes—it will become white and brittle, the gelatin or animal portion having been destroyed, leaving the lime and chalk, or earthy portion. Again, to show the animal without the earthy matter, place a small bone for a few days in dilute Muriatic Acid, say one part acid and five or six parts water, and the acid will have removed the earthy matter, by its affinity for the lime, leaving the bone unchanged in shape, yet so soft that it may be bent in any direction. In children, while the bones are soft, these two substances are nearly equal; but in adults, there is a much larger proportion of the earthy than of the animal matter in the bones. In the disease called Rickets, or Curvature of the Spine, the earthy part of the bones has been more or less absorbed, leaving them soft and flexible.

The bones, like all other parts of the body, are formed from the blood, being at first only *cartilage*, and while in this state, supplied only with the *lymph*, or white portion of the blood. By and by they are supplied with red blood, when the formation of true bone, or ossification commences, by the deposit of phosphate and carbonate of lime. This process begins at certain points, called the *points of ossification* — generally in the centre or middle of the bones, and gradually extends to the surface and ends. When ossification is complete, there is still a gradual and constant change going on in the bones. They increase in size, the proportion of the animal matter decreasing, and the earthy matter increasing, as the person advances in years, till in extreme old age, the earthy substance so preponderates that the bones are extremely brittle and easily broken.

Such bones as form joints, as those of the arms and legs, have a

reciprocal correspondence in their shapes at the points of union, the one usually being convex, or round, and the other concave, or socket-shaped, so that they nicely fit together. They are also at these points spongy and porous, which renders them more elastic than if compact and hard, and are also covered with a cushion of cartilage, which acts like India-rubber springs, in preventing or diminishing severe jars and concussions. There is around and about every joint what is called the *synovial membrane*, which secretes a fluid called *synovia*, or joint-water. This is for the purpose of oiling or lubricating the joints and surfaces of the bones and tendons, so that they may move smoothly upon each other, and avoid the friction consequent upon their action.

The bones of the head are divided into those of the *skull*, *ear*, and *face*. The skull is not one continuous bone, but is composed of eight distinct parts, united by ragged edges somewhat like saw-teeth, called *sutures*. These bones are also composed of two thin plates or tablets, united by a spongy, porous portion of bone. The outside plate is tough and fibrous; the inside one hard and glassy, and hence called the *vitreous* plate. The skull contains the brain, and we here see the wisdom displayed in guarding that important and sensitive organ. The outside plate being tough and yielding, and the spongy portion between the two, serve to diminish the vibrations and shocks in cases of falls and blows. The skull being composed of several bones, is also calculated to prevent *fractures* from extending as far as they otherwise would, if it was one continuous bone. In all this we see the hand of Intelligence and Wisdom. And there is probably no science in the world, or collection of facts, which contains so much and so conclusive evidence of the wisdom and design of a great First Cause, as that of the Anatomy of the human body.

BONES OF THE HEAD. — (SEE SKELETON.)

1. Frontal bone — which constitutes the front part of the head, or the forehead.
2. Parietal, or side bones — one on each side, extending from near the ear to the top of the head.
3. Nasal bones, or bones of the nose.
4. Occipital bone (Fig. 2) — which is at the back and lower part of the head.
5. Temporal, or temple bone — below the parietal, one on each side, to which the ear is attached.

Besides these there are what are called the sphenoid and the ethmoid bones, which are at the base of the skull, and back of the nose, and can not be shown in the plate. The sphenoid forms the floor of the skull, and has numerous holes or openings through it, affording passages for the nerves and bloodvessels.

6. Malar, or cheek-bone — one on each side.
7. Superior and inferior maxillary bones — or bones of the upper and lower jaws.

Besides the bones I have named, there are several smaller ones in the head and face, as the small bones of the ear, and others not necessary to mention.

BONES OF THE TRUNK.

The spinal column. The vertebræ or bones of the spinal column, or back-bone, are twenty-four in number, and are divided into three parts. The first seven of them, which form the bones of the neck (9), are called the *cervical* vertebræ. The next twelve (X), which constitute the back-bone proper, are called the *dorsal* vertebræ. The ribs are attached to these. The remaining five (14), constituting the loins or small of the back, are called the *lumbar* vertebræ.

Each vertebræ is a separate bone, joined by cartilage, and is of a peculiar shape, yet is so very similar to the vertebræ of the common animals, with which it is presumed every person is so familiar that it needs no description. There is a hole through each one, which, when they are joined together, in the *column*, constitute a canal or tube, for containing the *spinal marrow* or *cord*.

12. The sternum, or breast-bone. In the child this bone consists of eight pieces, which become united, so as to consist of but three pieces in the adult.

13. The ribs. They are attached to the spinal column behind, and the first or upper seven, called the *true ribs*, to the sternum in front. The lower five, called the *false ribs*, are not attached to the sternum. They are usually attached in front to the lower true ribs, by cartilage.

16. The sacrum, or sacred bone, so called because it was offered in sacrifice by the ancients. The lower end of this bone is called the *coccyx*, or *os coccygis*. It is a small, separate bone, and terminates the spine.

15. Os innominata, or nameless bone, the top of which forms the *hip bone*. This part of the bone is called the *ilium;* the lower part the *ischium;* and where the two unite in front, the *pubis*. In the sides of these large bones (the os innominata), near the lower part, is a deep socket, like a cup, called the *acetabulum*, in which the head of the femur, or thigh-bone, is placed. These two large bones, with the sacrum and coccyx, constitute what is called the pelvis.

BONES OF THE UPPER EXTREMITIES.

10. The collar-bone, called the clavicle. It unites at one end with the sternum or breast-bone, and at the other with the head of the shoulder-blade, and serves to keep the shoulders apart and elevated. There are two of them, one on each side.

11. The scapula, or shoulder-blade. It is a thin, flat bone, of a triangular shape (see Fig. 2), placed on the outside of the ribs, back of and below the shoulder. It has a large head, containing a cavity or socket called the *glenoid cavity*, which receives the upper end of the *humerus*, and to which it is attached.

17. The humerus, or bone of the upper arm.

18. The radius, or bone of the fore arm, which turns with the hand in its rotary movements. This bone is situated on the outside of the arm — the thumb side — and articulates or joins with the bones of the wrist to form the wrist-joint.

19. The ulna, the inside bone of the arm, which articulates with the humerus at the elbow to form the elbow-joint. It is the bone by which the muscles bend the fore arm.

20. The carpus, or wrist, composed of eight little bones of peculiar shapes, arranged in two rows, and so firmly bound together as to permit of only a small amount of movement

21. The metacarpus, or the five bones constituting the palm of the hand. The first range of the bones of the fingers and thumb is attached to them.

22. The phalanges, or bones of the fingers. The phalanges of the fingers have three ranges of bones, or three joints, while the thumb has but two.

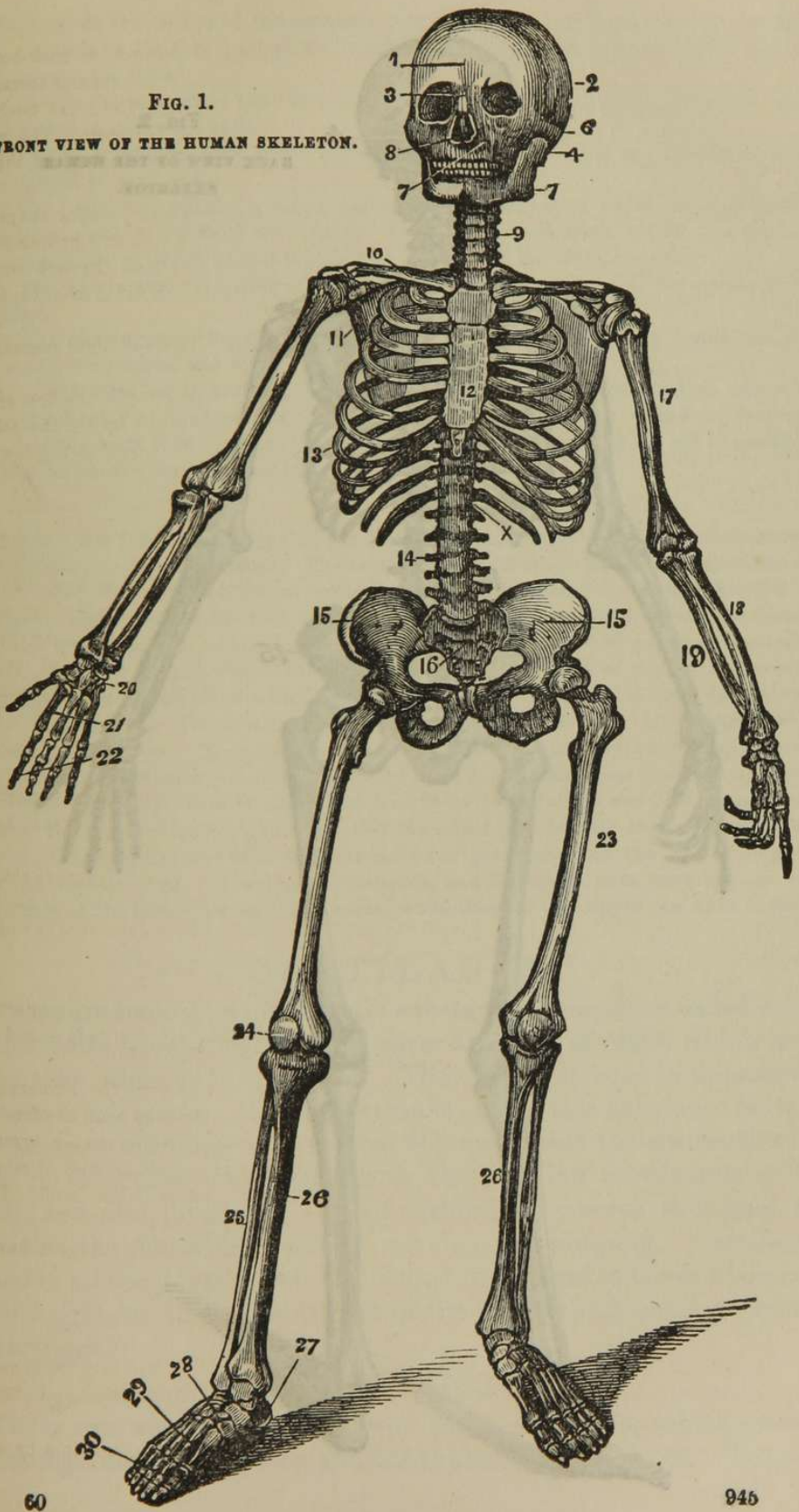
BONES OF THE LOWER EXTREMITIES.

23. The thigh-bone, called the femur, or os femoris. It is the largest bone in the body, and supports the weight of the head, trunk, and upper extremities, and often much additional weight.

24. The patella, or knee-pan. It is a small bone connected with the tibia by a strong

FIG. 1.

FRONT VIEW OF THE HUMAN SKELETON.



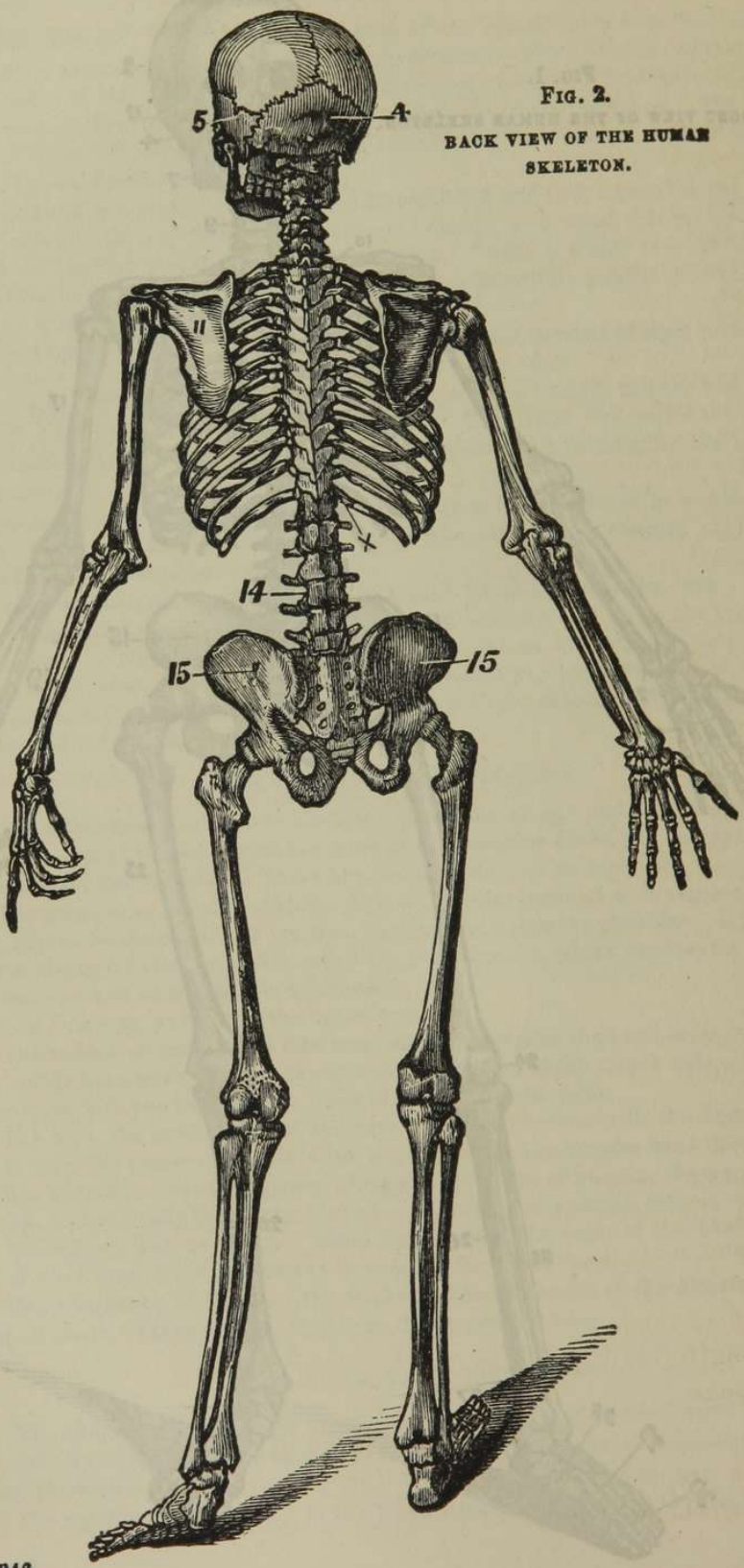


FIG. 2.

BACK VIEW OF THE HUMAN SKELETON.

ligament, while the tendon of the extensor muscles of the leg is attached to its upper edge. It rests on the fore part of the lower end of the femur, and acts like a pulley in straightening the limb.

25. The fibula, or smaller bone of the leg. It is much smaller than the tibia, and is firmly bound to it at each end.

26. The tibia, or large bone of the leg — the "shin bone." It is of a triangular shape, and enlarged at each end.

27. The heel-bone, called the calcis, and the astragalus, upon which the tibia rests.

28. The tarsus, or bones of the instep. There are five of them, which, like the bones of the wrist, are so firmly bound together as to allow of but little movement.

29. The metatarsus, consisting of five bones also, corresponding to the metacarpus of the hand.

30. The phalanges, or bones of the toes. They consist of fourteen bones, the great toe having two ranges, and all the others three.

The joints form an interesting part of the body. In their construction everything shows the display of wisdom, and the strictest regard to the security and the facility of motion of the parts thus connected together. Joints are formed by the aid of cartilages, synovial membrane, and ligaments.

THE TEETH.

The teeth are inserted into the upper and lower maxillary bones, in sockets or openings, termed the *alveola processes*. The teeth differ from other bones in composition and growth; and will not, like bones, unite again when broken. A tooth is divided into two parts, the *crown* and the *root*. The crown is that portion which protrudes from the jaw and gums, and is covered with a hard and highly-polished substance called the *enamel*. The root is the portion inserted in the jaw. This part of the tooth consists of bony matter, and is supplied with nutrient vessels and nerves. It is their nerves which cause them to ache. The first teeth that appear in the infant are called *milk-teeth*, and are twenty in number. They usually disappear, or are shed, about the seventh year, or soon afterward. What are called the *wisdom* teeth — *sapientiæ dentes* — do not appear till the person is twenty years of age. The four front teeth (above and below), are called *incisors;* the next one on each side is called the *cuspid* (eye-tooth); the next two on each side are the *bicuspids;* the next two, the *molars* or grinders; and the last one, on each side, the wisdom tooth. The incisors, cuspids, and bicuspids have each but one root; the molars of the lower jaw have two roots, while those of the upper jaw have three.

CARTILAGES.

THESE are smooth, white, elastic substances, sometimes called *gristle*, which unite bones together, and cover the ends of those which move upon each other, as in the joints. They resemble bone in appearance, but are much softer. There are thin layers of this substance between the joints or vertebræ of the spinal column, about the sixteenth of an inch in thickness, which facilitates the bending movements of the back; and also forming a sort of cushion, they serve to diffuse and diminish the shock in walking, running and jumping. Cartilage is found in all the joints. It is also added to the end of bones to increase their length, as in the front part of the ribs, which consists entirely of cartilage.

LIGAMENTS.

THESE are strong, white, fibrous cords, or bands, which connect bones together at the joints, and hold them in their places. They are

of various breadths; and sometimes they are so interwoven as to form a broad layer, which entirely surrounds the joint like a bag. In this case they are called *capsular ligaments*, and serve the purpose also of preventing the escape of the *synovial fluid*, which is intended to lubricate the parts. The shoulder-joint is surrounded by one of these capsular ligaments. Ligaments also serve to keep the liver, spleen, and other internal organs in their places. Like the bones, they possess but little sensibility when in a healthy state; but when attacked by inflammation, they are extremely painful.

MEMBRANES.

Membranes are thin, expanded substances, which line the cavities of the body and envelop all the organs. They are of different kinds, and vary in structure and appearance as much as they do in function.

Serous Membrane.—This envelops the brain, lines the chest and abdomen, and covers the lungs, stomach, intestines, and other organs of the abdomen and chest. It has a smooth, shining appearance, and is constantly moistened by a watery or serous exhalation, in consequence of which it receives its name. It has different names, however, in different parts of the body, according to the cavity it lines. In the chest it is called *pleura*, and when inflamed the disease is called the *Pleurisy*. In the abdomen it is called the *peritoneum*, and that which surrounds the brain is known as the *dura mater*, or *strong mother*. In a state of health it is white, but when inflamed it becomes red, the vessels being charged with blood; it is also apt, when inflamed, to form adhesions to the parts on each side of it, so that the lungs may become glued to the ribs, or the intestines to the internal surface of the abdomen, or to each other. *Dropsies* are caused by the exhalations from this membrane, the water collecting in cavities, and not being carried off by the *absorbents*.

Mucous Membrane. — This membrane lines the nose, mouth, throat, air passages of the lungs, stomach, intestines, and other free passages of the body. In the stomach and intestines it is thrown into folds, which increase the extent of its surface and prevent the food from hurrying through the alimentary canal with too much rapidity. It is soft, velvet-like in appearance, and is of a pale pink color when in health, but red when inflamed. It secretes a peculiar fluid, of a slimy nature, which is called *mucus*. Blood frequently exudes from this membrane, constituting *hemorrhage*, which may take place from the lungs, stomach, or any other part which it lines. A false membrane sometimes forms upon its surface, which in Croup is coughed up from the windpipe, and in other diseases, as Dysentery, is discharged from the bowels. This membrane, though ever so much inflamed, never forms adhesions. If it did, the intes-

tines, windpipe, throat, and other free passages, might become closed up, when death would be the inevitable consequence.

Cellular Membrane.—This is a loose and very thin membranous structure, which fills the space between the muscles, and between them and other solid parts, connecting them together without interfering with their functions. It may be seen everywhere between the muscles and the skin, of a light, shining color, giving a smoothness and softness to the surface of the body. It forms a great many little cells, which are kept moist by a watery vapor exhaled from the minute branches of the arteries; and if it should be exhaled in greater quantities than can be removed by the absorbents, it fills and distends the cells, and constitutes cellular or general Dropsy.

THE MUSCLES.

The muscles constitute that portion of the body which we call flesh, and are the proper name of what is known as *lean meat.* Instead of being one solid, continuous mass, as might be supposed from external appearance, the flesh of the body is found to be composed of a vast number of separate pieces or strips, of various lengths and shapes, but seldom more than half an inch in thickness, each enveloped in a thin, transparent membrane, and the whole arranged in layers one above another, giving to the body bulk, form and symmetry. These are called *muscles*, and, by their contraction and relaxation, produce the various motions of which the body is capable. The human body contains over five hundred—five hundred and twenty-seven, it is said—of these muscles, the most of them being arranged in pairs.

In structure, a muscle is composed of small bundles of fibers, called *fasciculi*, and each of these fibers is composed again of filaments, or threads. These bundles are nicely enveloped in thin cellular tissue or membrane, and the whole put together to constitute a muscle. A great many of the muscles terminate at one or both ends in what is called *tendon*—sometimes constituting *cords*, as in the wrist and ankle—which is a white, hard, firm, inelastic cellular substance, very trong, and is for the purpose of attaching the ends of the muscles to the bones. In some instances the tendon of a muscle spreads out, or expands, in its attachment, and then it is called *fascia*, or *aponeurosis.* This fascia, or expansion of tendon, becomes quite thick in some places, and serves as a protection to parts beneath, as in the palm of the hand and sole of the foot.

Upon the arms and legs the muscles are situated around the bones, and serve to invest and defend them, while they also form to some of the joints their principal protection. Upon the trunk they are

spread out to inclose cavities, and form a defensive wall, which yields to internal pressure and the expansion of the body.

Muscles may be arranged into several classes, as to their shapes, and the arrangement of their fibers. Some are completely longitudinal — that is, long and spindle-shaped, each extremity terminating in a tendon, as the muscles of the arms and legs: in others, the fibers are disposed like the rays of a fan, converging to a tendonous point, and constituting what is termed a *radiate*, or broad muscle. Again we find some with their fibers converging like the small feathers upon a quill or pen, to one side of a tendon — or it may be to both sides of it — running the whole length of the muscle. This style of muscle is called *penniform.*

In the description of a muscle, its attachments are expressed by the terms "origin" and "insertion." The *origin* is the attachment to the more fixed or immovable point, or that *toward* which the muscle draws some other part, in its legitimate action: while the *insertion* is at the more movable point, or part to be acted upon. For instance, the principal muscles which move the arm are attached at one end to the scapula, or shoulder-blade—this is called their *origin;* while the other end is attached to some portion of the humerus, or bones of the arm, and is called their *insertion.* The principal muscles which produce the motions in the lower extremities have their *origin* upon some portion of the large bones of the hip or pelvis, while their *insertion* is upon the femur, or bones of the leg. The interstices between the muscles, especially in young persons, are generally filled with a substance called *adipose* matter, or fat, which gives to the different parts of the body a round and plump appearance.

In conformity with the general divisions of the body, the muscles, like the bones, may be arranged into four parts. 1st. Those of the Head and Neck. 2d. Those of the Trunk. 3d. Those of the Upper Extremities. 4th. Those of the Lower Extremities. In their distribution they may be said to form two layers, a superficial and a deep-seated one. Though in some places there are more than this. On the back, for instance, the muscles are arranged in six layers, one above the other, in order to produce the various and complicated movements of the back, neck, arms, chest, and abdomen. All the various movements of the body, and of its different parts, are produced by the muscles, the bones serving, in most cases, as the levers of motion.

Those muscles by which a limb is bent, are called *flexors*, and those by which it is straightened, *extensors.* These two sets of muscles are said to *antagonize* each other: that is, the flexors pull in one direction, and the extensors in another, so that by their alternate contraction and relaxation, two distinct and opposite motions are produced.

The muscles are also classified under the two heads of *voluntary* and *involuntary*. The first are such as are under the control of the will, and enable us to walk, run, leap, and perform any other voluntary act. The muscles by which we bend the arm, open and shut the mouth, etc., are *voluntary* muscles, because we call them into action at pleasure, by an effort of the will.

The involuntary muscles are those over which the will has no influence. The heart is a muscular organ, acting with tremendous force in propelling the blood through the arteries; the stomach also, and the intestines, have muscular coats, by which they are enabled to contract and relax for the purpose of moving their contents; yet they are uncontrolled by the will, acting independent of it, and are therefore denominated *involuntary* muscles. There are others which are both voluntary and involuntary, and are, therefore, said to be *mixed;* as the diaphragm, and other muscles of respiration. They perform their regular functions, asleep or awake, whether we will it or not; yet we can, by an effort of the will, cause them, for the time being, to act quicker, faster, or slower, as we please.

Muscles are acted upon and controlled by the *nerves*. Contractility is an inherent quality of muscular fiber, enabling it to shorten its substance, like a piece of India-rubber, when the proper stimulus is applied, and again relaxing when the stimulus is withdrawn. This stimulus is the *nervous fluid*, which acts upon the muscles somewhat similar to Galvanism or Electricity. The velocity of muscular contraction, or rapidity with which the voluntary muscles may be made to act, is truly astonishing. It is often as quick as thought. This may be seen in rapid speaking, or playing upon a musical instrument. Persons have been known to utter distinctly fifteen hundred letters in a minute, the pronunciation of each letter requiring both contraction and relaxation of the same muscles, thus making *three thousand actions in a minute!* It is owing to the contractility of the muscles, and the wonderful power which the will or mind (which furnishes the nervous stimulus) has over them, that we are enabled to pursue the various avocations of life. "By their action the farmer cultivates his fields, the mechanic wields his tools, the sportsman pursues his game, the orator gives utterance to his thoughts, the lady sweeps the keys of the piano, and the young are whirled in the mazy dance."

The oblique abdominal muscles terminate in a broad pearl-colored fascia, or *aponeurosis*, which completely covers the front or middle portion of the abdomen; while the dorsal muscles, or muscles of the back, blend into one mass of tendon below, which expands and attaches to the sacrum, and back part of the iliac crest, or hip-bones. On the wrists and ankles, the long tendons of the muscles are closely and firmly bound down by strong bands, called the *annular ligaments*.

Notwithstanding their great number, the muscles all have names—Latin names, some of them long and difficult to remember. These names generally have reference in their meaning to the character or use of the muscles to which they are applied, so that if we understood the Latin language as well as we do the English, we should, on hearing the name of a muscle, immediately know something of its general character, situation, and use.

It would be as useless, perhaps, in a work like this, to give the names of all the muscles, and their "origin" and "insertion," as it would be difficult to convey an exact idea of them. The only way to get a correct knowledge of the muscles, as to their shape, size, and location, is by seeing them dissected on the real subject. But such a knowledge, even, is of but little practical use to any one except the anatomist or surgeon. It is well to know that we have muscles, and to understand the general character and use of them. It is still more important to know how to take care of our muscles — how to develop them properly and keep them in a healthy condition.

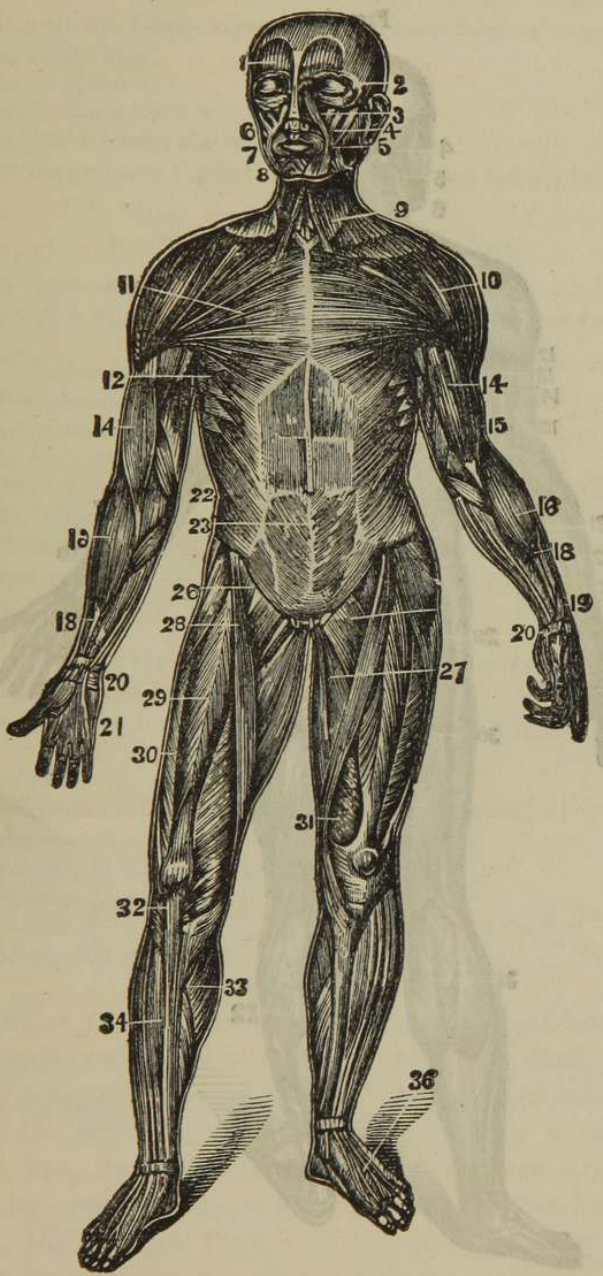
The accompanying engravings will give you an idea, as well as it can be done on paper, of the character, shape, and appearance of the muscles. They exhibit only the superficial or outside muscles, such as would be seen on removing the skin from the body. Underneath them is one or two, and in some places several layers of other muscles. Such as can be seen in the Figures are numbered, and their names and uses given in the following tables.

NAMES OF THE PRINCIPAL MUSCLES, AND THEIR USES.

FIG. 3—FRONT VIEW OF THE MUSCLES.

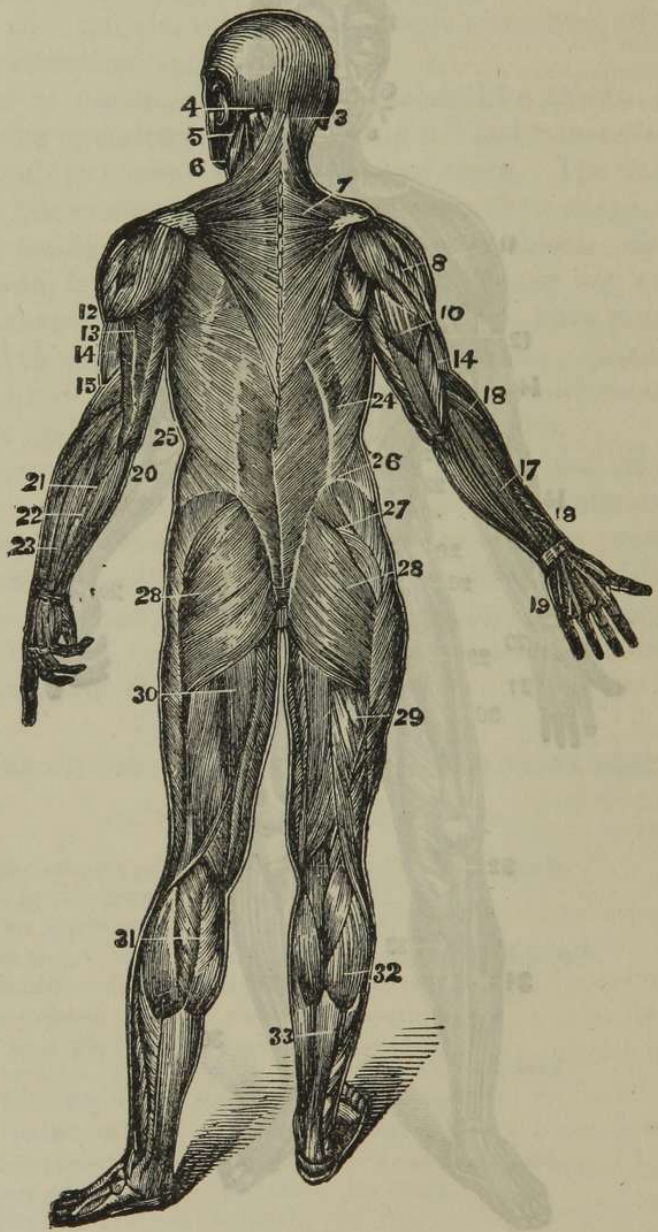
1. Occipito-frontalis—to raise the eyebrows, and move the scalp.
2. Orbicularis palpebrarum—to close the eyelids.
3. Levator labia superioris—to elevate the upper lip.
4. Zigamaticus major; 5. Z. minor—to elevate angles of the mouth.
6. Masseter anterior—to bring the jaws together in chewing.
7. Orbicularis oris—to close and pucker the mouth.
8. Depressor labii inferioris—to depress the lower lip.
9. Platysma myoides (and 6, Fig. 4)—to bend the neck forward.
10. Deltoid (and 8, Fig. 4)—to elevate or raise the arm.
11. Pectoralis major—to bring the shoulder forward.
12. Latissimus dorsi—to draw the arm backward and downward.
14. Biceps flexor cubiti—to bend the arm at the elbow.
15. Triceps extensor cubiti—to extend the fore arm.
16 Supinator radii longus—to bend the wrist.
18. Flexor carpi radialis longior—also to bend the wrist.
19. Flexor communis digitorum—to bend the digits, or fingers.
20. Annular ligament—a strong ligament which surrounds the wrist, to hold the muscles and tendons down to their place. It is a perfect *wrist-band.*
21. Palmer fascia—or fascia of the palm of the hand—a tendonous structure, spread out to protect the organs beneath.

Fig. 8.



FRONT VIEW OF THE MUSCLES.

FIG. 4.



BACK VIEW OF THE MUSCLES.

22. Obliquus externus abdominus—to support the bowels.

26. Psoas magnus—27. Abductor longus—28. Sartorius—these three muscles bend the lower limbs at the hip-joints. The sartorius is called the "tailor's muscle," because it is the muscle used in drawing one leg over the other, in the position of a tailor when sewing.

29. Rectus femoris—30. Vastus externus—31. Vastus internus—these three extend or straighten the leg at the knee.

32. The tendon of the patella.

33. Gastrocnemius—to extend the foot.

34. Tibialis anticus—to bend the foot at the ankle.

36. Tendons of the extensor digitorum communis—to extend the toes.

FIG. 4—BACK VIEW OF THE MUSCLES.

3. Complexus—to draw the head backward.

4. Splenius (two, S. colli and S. capitis)—to draw the neck backward, and rotate the head.

5. Masseter—to close the jaws.

6. Sterno-cleido—mastoideus—to draw the head forward.

7. Trapezius—to draw the shoulder up and backward.

8. Deltoid—to raise the humerus.

10. Triceps extensor—to extend the fore arm; 13. Tendonous portion of the triceps; 14. Anterior edge of the triceps.

15. Supinator radii longus—to supinate the hand, or turn it upward.

17. 22. Extensor communis digitorum—to extend or straighten the fingers.

18. Extensor ossis metacarpi pollicis—to extend the first metacarpal bone; 19. Its tendons.

20. Olecranon process of the ulna and insertion of the triceps.

21. Extensor carpi ulnaris—to extend the hand.

24. Latissimus dorsi—to draw the arm backward and downward; 25. Its tendonous origin.

26. Obliquus externus—to support the bowels.

27. Gluteus medius—to rotate the thigh outward and inward.

28. Gluteus magnus—to draw the thigh backward.

29. Biceps flexor cruris—to flex or bend the leg.

30. Semi-tendinosus—to assist in bending the leg.

31. 32. Gastrocnemius (internus and externus)—to extend the foot.

33. Tendo Achillis—the great tendon or cord of the heel.

Alternate exercise and rest constitute the great law of muscular health and development. The muscles should be used, in order that their size and strength may be equal to the demand made upon them. It is a law of the muscular system that whenever a muscle is called into frequent use, its fibers increase in thickness — within certain limits — and become capable of acting with greater force; while, on the contrary, the muscle that is little used, decreases in size and power. This exercise, or use of the muscles, however, must be properly regulated, and confined within certain limits. Too much, or too long continued exertion, is injurious. Relaxation should quickly follow contraction, or exhaustion of the muscle will be the consequence. So must rest follow exercise, and it must be continued long enough for the nutrition and recruit of the muscles to take place, or

they will become lessened in size and diminished in power. Exercise, either for pleasure or profit, should never be carried to the point of languor or exhaustion. When it is desirable to develop or strengthen the muscular system, exercise should be taken moderately at first, and gradually increased as the system can bear it.

Friction upon the muscles — in other words, rubbing them — is very beneficial. It hastens the process of nutrition, and the re-supply of the exhausted nervous fluid. The whole body should be well rubbed once or twice a day with a coarse towel or a good flesh brush. The horse will travel further and easier, if not only rubbed daily, but also at such times as the traveler stops to rest. "It is a matter of surprise," says a popular writer on Physiology, "that the experience and common sense which lead every person who owns a horse, to have him well groomed every day, should not have taught men that the same good thing should be done for the human body, which will, in fact, be more benefited by rubbing than any animal. Every laborer with muscles or brain, every gentleman or lady of leisure, who cares to labor easily, enjoy comfort, or appear gracefully, should equally and daily practice rubbing the body from head to foot."

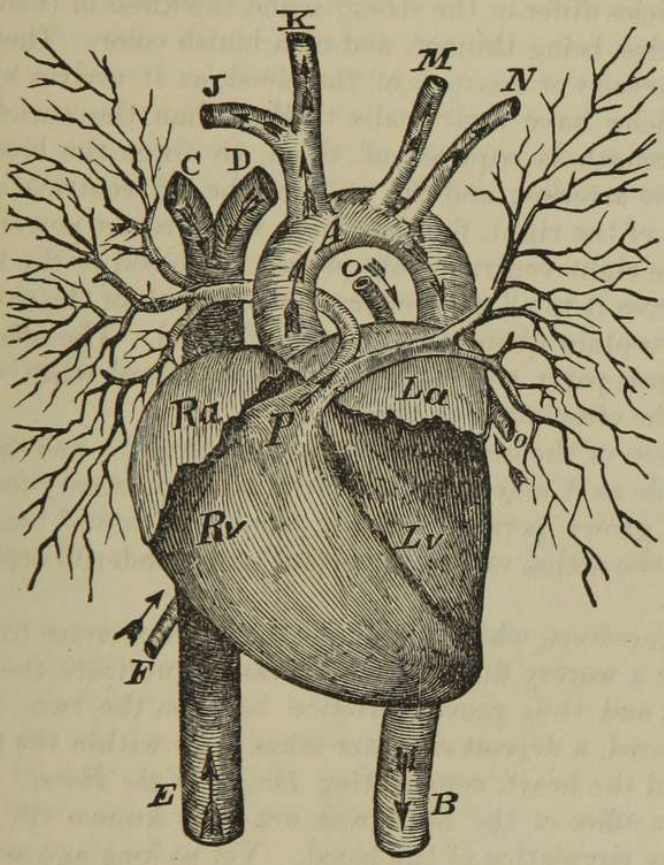
The regular exercise of the muscles should be conducted under proper mental influences. The mind and the body reciprocate in their influences, upon each other. The mind has much to do with the beneficial exercise of the muscles, while inactivity of the muscular system produces ennui, and dullness of intellect, which nothing but exercise can remove. In fine, proper and judicious exercise produces delightful sensations, a clearness of intellect, and elasticity of spirits, that the indolent never know. While, in order to a healthy exercise of the muscles, there should be an active intellect, a cheerful disposition, wholesome food, plenty of pure, cool air, and loose warm clothing in cold weather, and loose cool clothing in warm weather.

THE CIRCULATORY ORGANS.

The Heart.— The heart is a very strong muscular body, which propels the blood through the arteries to every part of the system. It is somewhat in the shape of an inverted cone, and is situated in the chest, a little to the left of the sternum, or breast-bone, its lower end, or apex, resting on the tendonous portion of the diaphragm, about three inches from the sternum, opposite the space between the fifth and sixth ribs of the left side. The heart is surrounded by a strong membranous sac called the *pericardium*, which protects it, and confines it to its proper place. It occupies an oblique position in the chest, and is almost wholly covered by the lobes of the left lung. The medium weight of the heart, in adults, is from eight to ten ounces, being about an ounce heavier in man than in woman.

The heart has four cavities, two of which are called *auricles*, and two *ventricles;* and from its peculiar construction may properly be called a double organ, having two sides, the right and the left, with

FIG. 5.



VIEW OF THE HEART.

FIG. 5.—Ra, Right auricle; Rv, Right ventricle; La, Left auricle; Lv, Left ventricle; A, great aorta and its arch; B, aorta descending into the abdomen; C, right subclavian vein, coming from the right arm; D, left subclavian vein, coming from the left arm—these two branches unite and form the descending vena cava; E, ascending vena cava, which returns the blood to the heart from the lower extremities; F, vein returning the blood from the liver, spleen, and bowels; H, arteria innominata, dividing into right carotid artery (K), which goes to the right side of the neck; and right subclavian artery (J), which goes to the right arm; M, left carotid artery, going to the left side of the neck; N, left subclavian artery, going to the left arm; P, pulmonary artery, which rises from the right ventricle and divides, one branch passing under the arch of the aorta, goes to the right lung, the other goes to the left lung; O, O, pulmonary veins, which return the blood from the lungs to the heart—they empty into the left auricle. ☞ The arrows show the course of the blood in the arteries and veins.

an auricle and ventricle in each. The compartments of the two sides are separated by a muscular partition called the *septum*. The *aorta*, or great artery-trunk, and the *pulmonary artery*, proceed from the

heart — the latter from the right ventricle, and the other from the left ventricle. The large trunks of the veins, called the descending and ascending *vena cava*, and the *pulmonary veins*, terminate or open into the auricles of the heart.

The auricles differ in the strength and thickness of their walls from the ventricles, being thinner, and of a bluish color. They serve as a sort of *reservoirs* or *receivers* of the blood, as it arrives by the veins. The ventricles have their walls thicker than the auricles, because greater strength is required of them, to force the blood out and through the arteries; and the walls of the left ventricle are thicker than those of the right, for the reason that greater power is required of it. The right ventricle only propels the blood to the lungs, while the left forces it to all parts of the body. Each of the cavities of the heart will contain about two ounces of blood. The offices or functions of these parts will be more fully explained when we come to speak of the circulation of the blood.

The action of the heart consists in its *contraction* and *dilatation*, and as incredible as it may seem, it contracts every twenty-four hours, in a healthy, grown person, over *one hundred thousand times!* Asleep or awake, the action of this important and wonderful organ goes constantly on.

The *pericardium*, which surrounds the heart, secretes from its internal surface a watery fluid, which serves to lubricate the exterior of the heart, and thus prevent friction between the two. Sometimes, when diseased, a deposit of water takes place within the pericardium and around the heart, constituting *Dropsy of the Heart.*

The true office of the heart was not fully known till Harvey discovered the circulation of the blood. Yet so long ago as the days of Plato it seems that a tolerably rational idea of its function and of the circulation of the blood was entertained, for in speaking of this organ that writer very prettily observes: "It is the center or knot of the bloodvessels; the spring or fountain of the blood, which is carried impetuously round; the blood is the food of the flesh; and for the purpose of nourishment, the body is laid out in canals, like those which are drawn through gardens, that the blood may be conveyed as from a fountain to every part of the body." It would be difficult for any one at the present day to give, in as few words, a more correct and expressive idea of the whole subject than is here given by this ancient heathen philosopher.

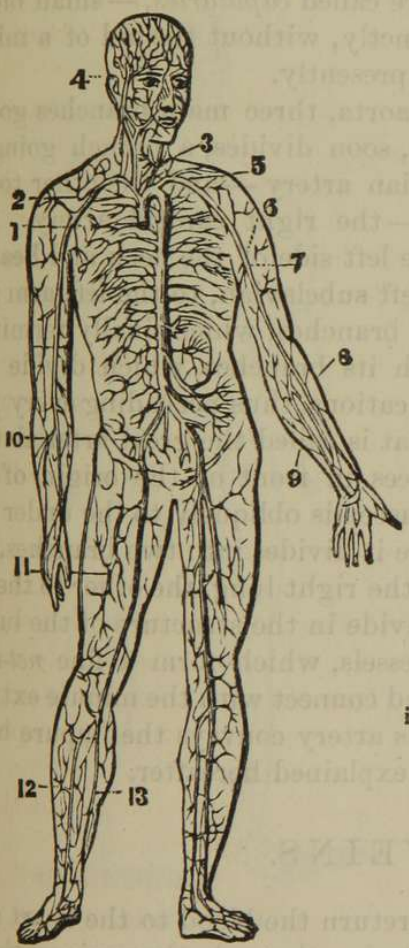
THE ARTERIES.

The arteries are strong, elastic, membranous tubes, which arise from the heart by two trunks, and convey the blood, by their innumerable branches, from the heart to every part of the system.

They are composed of three coats. The outside, called the *cellular* coat, is firm, strong, and elastic, enabling it to withstand the impulse of the blood as it is sent from the heart. The middle or *muscular* coat is composed of yellowish-white fibers — is thicker than the external coat, but not so strong, as its fibers pass around the tube instead of lengthwise. The inner coat is a thin, serous membrane, which lines the interior of the artery and gives it a smooth surface, permitting the blood to flow along it freely.

The arteries are enveloped in sheaths of a loose cellular texture (the same which envelop the muscles), which separate them from the

FIG. 6.



THE ARTERIAL SYSTEM.

FIG. 6 — THE ARTERIAL SYSTEM:

1. Commencement of the aorta, where it leaves the heart.
2. Arch of the aorta.
3. Carotid artery — (one on each side).
4. Temporal artery.
5. Subclavian artery.
6. Axillary artery.
7. Brachial artery.
8. Radial artery.
9. Ulnar artery.
10. Iliac artery.
11. Femoral artery.
12. Tibial artery.
13. Peroneal artery.

☞ All of these arteries are in pairs; that is, one on each side, or in each extremity.

adjacent parts, and also inclose the veins and nerves which generally accompany them.

All the larger arteries are deeply seated, by which arrangement they are protected from injury by accidents, while the veins, which do not involve so serious consequences in case of wounds, are gene-

rally placed near the surface of the body — often immediately under the skin, as on the back of the hand, and upon the wrist.

The aorta, which conveys the pure blood to all parts of the body, proceeds from the *left ventricle* of the heart, rises toward the left clavicle or collar-bone, and turns in the form of an arch toward the back and left side, and passes down behind the heart, through the diaphragm, along the spine, sending off numberless branches — which also divide and subdivide, like the branches of a tree — to all the internal organs and parts of the body, and finally, in the lower part of the abdominal cavity, it *bifurcates* — that is, divides into two main branches, one passing down each leg, constantly sending off branches, till the whole terminate in what are called *capillaries*, — small blood-vessels too delicate to be seen distinctly, without the aid of a microscope, and which will be described presently.

From the top of the arch of the aorta, three main branches go off. The first, or the one on the right, soon divides, a branch going to the right arm — the right subclavian artery — and the other to the right side of the neck and head — the right carotid artery. The other two branches pass, one to the left side of the neck and head — left carotid — and the other, the left subclavian, to the left arm; all of which divide into innumerable branches, which finally terminate in the *capillaries*. The aorta, with its branches, which divide and subdivide to their ultimate ramifications, thus pervading every part of the human frame, constitute what is called the great arterial tree.

The pulmonary artery commences in front of the origin of the aorta, from the *right ventricle*, and ascends obliquely to the under surface of the arch of the aorta, where it divides into two branches, one of which passes under the arch to the right lung, the other to the left lung. These also divide and subdivide in the structure of the lungs, and terminate in the capillary vessels, which form a fine *net-work* around the air-cells of the lungs, and connect with the minute extremities of the pulmonary veins. This artery conveys the impure blood to the lungs, as will be more fully explained hereafter.

THE VEINS.

The veins are the vessels which return the blood to the heart after it has been circulated by the arteries through the various tissues of the body. They are thinner and more delicate in their structure than the arteries. The blood passes through them slower than through the arteries, and not being propelled by force, as in the latter, it is not necessary that they should be so strong in their texture. They are, like the arteries, composed of three coats, the *cellular*, the *muscular*, and the *serous*.

The Capillaries.— Before proceeding further with the veins, it is proper to speak of the capillaries, as they form the connecting link between the arteries and the veins, receiving the blood from the one and transmitting it to the other. They are distributed through every part of the body, constituting a complete net-work, and rendering it impossible to insert the point of the finest needle into the skin or any part of the flesh without wounding them and causing the blood to flow. These little vessels are called *capillary* (which means *hair*) on account of their being so small; but a hair, compared with such tubes, says Magendie, is a huge cylinder! They are so small that the

FIG. 7.

THE VENOUS SYSTEM.

FIG. 7 — THE VENOUS SYSTEM:

1. The right auricle.
2. Descending vena cava.
3. Ascending vena cava.
4. Right and left iliac veins.
5. Right and left subclavian veins.
6. Jugular vein of right side.

aid of a microscope is required to see them. One of the characteristics of *inflammation* is the red appearance of the part; this is owing simply to the fact that the capillary vessels are distended and highly charged with blood. The same is seen when a lady blushes. It is the stagnation of the blood in its passage through these vessels that causes inflammation. The capillaries perform the important funo-

tions of secretion and nutrition; they extract from the blood its nutritious materials and convert them into bone, muscle, and the various other tissues of the body.

As the veins proceed, their various branches, like the branches of a river, coalesce, or unite, to form still larger branches, till they finally terminate in the large trunks, which convey the blood direct to the heart. In diameter the veins are much larger than the arteries. They are also furnished with numerous *valves*, particularly the large veins of the extremities, which allow the blood to flow freely toward the heart, but operate to prevent any retrograde movement.

The veins that receive the blood from all parts of the body, follow nearly the same course as the arteries, and at last unite to form two large trunks, called the ascending *vena cava*, and the descending *vena cava*. The ascending cava is that which receives the blood from the lower extremities and the regions of the abdomen; while the descending cava receives the blood from the upper parts of the body; and both empty their contents into the *right auricle* of the heart.

There is a peculiarity, however, in the veins that come from the stomach, spleen, and intestines. They unite to form a large vein called the *vena porta*, which enters the liver, and there divides and ramifies that organ like arteries, and then unite again into a common trunk, which enters the ascending vena cava near the heart. This is called the *portal circulation*.

Besides these there are the two *pulmonary veins*, which rise in the substance of the lungs, from the numerous capillaries, and return the blood from those organs, after it has been purified, to the *left auricle* of the heart.

THE RESPIRATORY ORGANS.

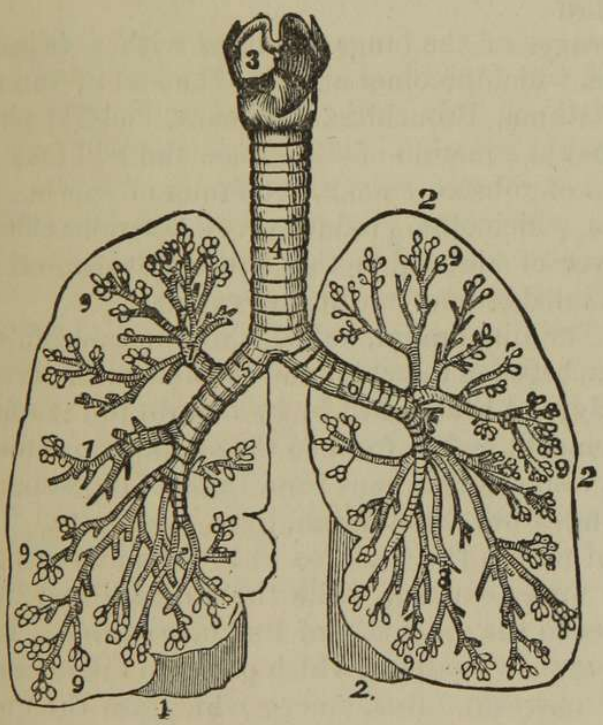
The Lungs.—The respiratory organs are the *lungs* (in animals called the *lights*); the *trachea*, or windpipe; the *bronchia*, or bronchial tubes, and the *air-cells*—which are innumerable little cells at the extremities of the bronchial tubes. The *diaphragm*, *ribs*, and several *muscles*, also aid in the respiratory, or breathing process.

The lungs are soft, spongy bodies, occupying the cavity of the chest, or thorax, situated on each side of the heart, and are attached to the neck by means of the trachea, or windpipe. They consist of two portions, called the *right* and the *left* lung, which are separated from each other by a thin membranous curtain called the *mediastinum*. This curtain stretches from the spine or back-bone to the sternum or breast-bone, and divides the chest into two cavities.

The shape of the lungs, as a whole, corresponds with the cavity of the chest, being rounded or convex next the ribs, and hollow or concave next the heart and diaphragm. In color they are of a grayish

red, but in old age change to a livid purple. The great serous membrane, already described, which lines the inside of the chest, called the *pleura*, is reflected upon the lungs, and forms their external covering or coat. That is to say, the pleura is *double*, one lamina of it lining the inside of the ribs, or costals, called the *pleura costalis;* and the other — a continuation of the same — which covers the lungs, called the *pleura pulmonalis*. The right lung is the larger (because the heart takes up a portion of the left side of the chest), and is divided into three portions, called *lobes*. The left lung has but two lobes—the heart and its surrounding membrane, the pericardium, being situated between them.

Fig. 8.



1, I. An outline of the right lung.
2, 2. An outline of the left lung.
3. The larynx.
4. The trachea, or windpipe.
5, 6. The right and left bronchial tubes, which go to the right and left lungs, and divide into innumerable branches which terminate in the little air-cells, 9, 9, 9, 9, a very imperfect idea of which is shown in the figure.

FIG. 8—THE TRACHEA AND AIR-TUBES OF THE LUNGS.

The trachea, or windpipe, passes down in front of the throat or foodpipe, and may be distinctly felt, being immediately beneath the skin. Just below the top of the breast-bone it divides laterally into two branches, called the *bronchia*, which go direct to the lungs, and there divide and subdivide into an immense number of little tubes, constituting the air-passages of the lungs, which gradually diminish in size, and finally terminate in what are called the *air-cells*. These cells are small, very thin, and communicate freely with each other. The membrane which composes these cells is continued throughout

the air-passages, and is estimated to be equal in extent to near 22,000 square inches. Hence it will be seen that the lungs are capable of containing a large amount of air. The quantity that enters at each *inspiration* is supposed to be about 40 cubic inches, and an equal quantity, of course, is given out at each *expiration*. Hence, supposing there are 20 inspirations in a minute, which is nearly correct, the quantity of air that would enter and pass out every minute would be 800 cubic inches; and at the same rate it would amount to 48,000 cubic inches in an hour, and 1,152,000 every twenty-four hours.

The process of breathing is of the greatest importance in the animal economy. The lungs are the great laboratory of the system, for the purpose of purifying the blood and rendering it fit for circulation, for the purposes of nutrition, and the production of animal heat-- as will be explained hereafter.

The cells and air-passages of the lungs are lined with a delicate, thin, mucous membrane, which becomes at times the seat of various disorders, as Croup, Asthma, Bronchitis, Influenza, and Hooping-cough. It also performs the function of *absorption*, and will take up the poisonous properties of tobacco smoke, the fumes of spirits, and other volatile substances, which often produce very deleterious effects. It is owing to this power of absorption that the best treatment of Lung diseases is by the inhalation of medicated vapors.

The Diaphragm.-- The diaphragm, called also the midriff, is a thin, muscular partition, between the chest and the abdomen, extending crosswise of the body, and is attached by its margin to the spine, to the lower ribs on each side, and in front to the sternum, or breast-bone. It separates the respiratory organs from those of digestion, or rather the heart and lungs from the stomach, liver, spleen, etc. The diaphragm rises upward within the chest, so as to form an arch, the lungs resting upon its upper surface, while the stomach and liver accommodate themselves to the concavity of its lower surface. It is perforated by the *œsophagus*, or foodpipe, which passes to the stomach, and by several other important tubes, among which are the great aorta, and ascending vena cava.

The diaphragm is the principal agent in producing the act of respiration. Every time we breathe, this organ contracts, by which means it descends from its arch shape to that of a *plane*, or level surface, pushing down the stomach and liver with it. This enlarges the cavity of the chest, while the lungs, which rest upon its upper surface, follow it in its descent, allowing those organs to *expand*, and thereby causing a *vacuum* within them, which is immediately filled by air which rushes in through the trachea and bronchial tubes, filling up the air-cells. This is called *inspiration*. The diaphragm then immediately becomes relaxed (unless prevented by the *will*, as in

"holding the breath"), and is pushed up by the organs beneath it, assuming its arched shape again, thus diminishing the size of the chest, which compresses the lungs and causes the air within them to be pressed out or expelled. This is termed *expiration*. An enlargement of the chest, therefore, is accompanied with *inspiration*, and a contraction of it with *expiration*. In the first, the diaphragm contracts and becomes a *plane;* in the other, it relaxes and is pushed up by the abdominal viscera beneath it. What we call breathing, therefore, is performed entirely on the principle of the blacksmith's bellows, the operation of which is familiar to most persons. There are several of the muscles of the ribs, which resist in expanding and contracting the chest, and consequently in respiration.

THE DIGESTIVE ORGANS.

The principal organs of digestion are the stomach, intestines, liver, and some smaller glands that will be noticed under the proper head. The mouth, teeth, pharynx, œsophagus, lacteals, thoracic duct, and pancreas, are also sometimes classed among the digestive organs. The mouth and teeth need no description. The pharynx is simply that cavity immediately back of the mouth and root of the tongue, properly speaking, the *throat*. It is the common opening from which both the trachea and œsophagus commence. The œsophagus is a large membranous tube through which the food passes from the mouth or pharynx into the stomach. It is a muscular organ, lined with a mucous membrane, and passes down behind the trachea and heart, and terminates in the stomach. The lacteals, thoracic duct, and pancreas, will be described in their proper places.

The Stomach.—The stomach is a membranous sac or bag, into which the food passes when it is "swallowed," preparatory to the process of digestion. It is situated mainly in the left side of the upper part of the abdominal cavity, immediately below and in contact with the diaphragm, and extends from left to right. When moderately distended, the stomach of an adult is capable of holding about three pints. The left extremity of the stomach, which is much larger than the right, lies immediately under the lower ribs of the left side, while the right extremity extends only a little beyond the lower end of the sternum, or breast-bone, toward the right side, and is overlapped by the left lobe of the liver. It is separated from the small intestines by the *arch of the colon*, which passes immediately below it, from the right to the left side.

The stomach has two orifices or openings. The upper one, which is near the left extremity, is formed by the termination of the œsophagus, and is called the *cardiac* orifice. The other is the opening at

the right extremity, which communicates with the intestines, or rather with the *duodenum*, and is called the *pyloric* orifice. This orifice has a kind of valve which is called the *pylorus*—a Greek word signifying *porter*, or *gate-keeper* — because it will not readily allow the food to pass out of the stomach unless properly digested.

The substance of the stomach consists of three coats. The outer, which is called the *serous* or *peritoneal coat*, is a firm, strong, glossy membrane, which not only covers every part of this important organ, but extends to all the intestines, and also lines the cavity of the abdomen. The middle or *muscular coat*, is composed of two layers of fleshy fibers — one layer of which extends longitudinally of the stomach, and the other transversely. These fibers have the power of contraction and relaxation, for the purpose of producing the peculiar motions of the stomach in digestion. The inner or *mucous coat*, is soft, velvety, and presents many folds, somewhat resembling honeycomb, and is of a pale pink color in health, but red when inflamed. Within the folds of this coat exist numerous little glands, which secrete what is called the *gastric juice*, a fluid which is essential to the process of digestion.

Bloodvessels and nerves are distributed to the stomach more plentifully than to any other organ. It also has a branch extended to it from the *great sympathetic nerve*, which causes it to sympathize so readily with other parts of the body when they are diseased. Let any important organ of the system become seriously affected, and the patient soon becomes "sick at the stomach."

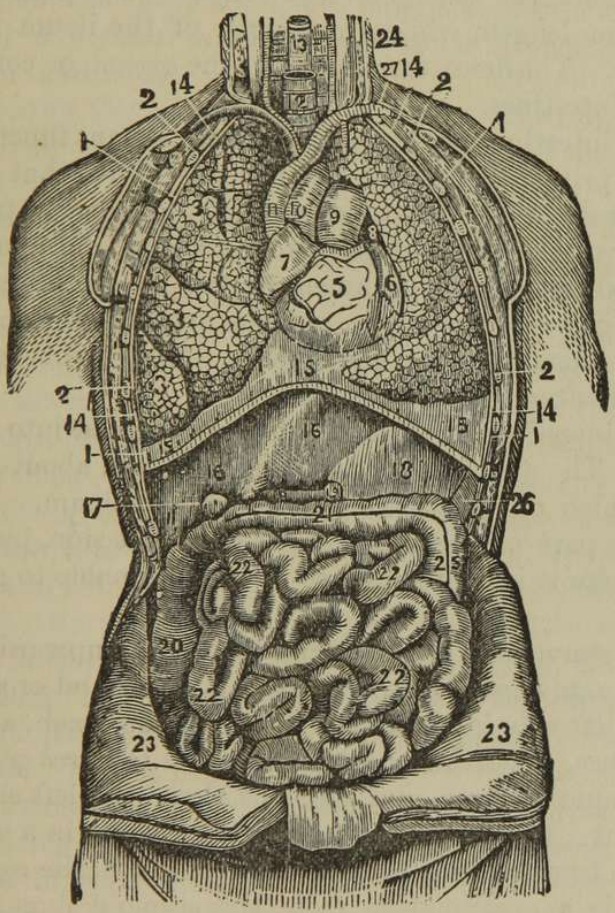
The Intestines.—The intestines, or alimentary canal, as they are sometimes called, are divided into two parts, the *small* and *large* intestines. The small intestine, in an adult, is about twenty-five to thirty feet in length, and the large one about five feet, being altogether some five or six times longer than the body. They are attached to the spine or back-bone, by folds of the *peritoneum*, which is here called the *mesentery*, and which contains the *mesentery glands*. It spreads out from the spine like a ruffle from the bosom of a shirt, having the intestines attached to its edge, and allows them to float somewhat loosely in the cavity of the abdomen.

The structure of the intestines is very similar to that of the stomach — having three coats, the same as that organ, the peritoneal, the muscular, and the mucous. The muscular coat, as in the stomach, consists of two sets of fibers, the *longitudinal* and the *circular*, which, by their alternate contraction and relaxation, produce what is called the *vermicular* (worm-like), or *peristaltic* motion of the bowels — which is for the purpose of moving their contents.

The first portion of the small intestines is the *duodenum* — so called because it is about twelve inches long. It is considerably larger in

diameter than any other portion of the small intestines, and hence has been considered a sort of secondary stomach. It commences at the pylorus and passes obliquely backward to the under surface of the liver — then descends perpendicularly in front of the right kidney, and passes across under the stomach, behind the colon, and terminates in the commencement of what is called the *jejunum*, which is

FIG. 9.



FRONT VIEW OF ORGANS IN THE CHEST AND ABDOMEN.

FIG. 9.— The figures 3 and 4 represent the lobes of the right and left lungs; 5, the right ventricle of the heart; 6, the left ventricle; 7, the right auricle; 8, the left auricle; 9, the pulmonary artery; 10, the aorta; 11, the descending vena cava; 12, the trachea; 13, the œsophagus; 14, 14, the pleura, which lines the inside of the chest; 15, 15, the diaphragm, which separates the lungs and heart from the stomach and liver; 16, 16, the right and left lobes of the liver; 17, the gall bladder; 18, the stomach, partly overlapped by left lobe of the liver; 26, the spleen; the duodenum (19, 19,) is partly seen immediately under the left lobe of the liver; 20, the ascending colon; 21, the transverse colon; 25, the ascending colon; 22, 22, 22, 22, the small intestines; 23, 23, the walls of the abdomen turned down. The kidneys lie immediately behind the stomach and liver. The muscles of the chest, and ends of the ribs cut off, are intended to be designated by figures 1 and 2, and the edge of the pleura is seen immediately inside of them, next the lungs

the next subdivision of the small intestines. About four inches from the pylorus, the duodenum is perforated by the biliary and pancreatic *ducts* through which it receives the *bile* and *pancreatic juice* — fluids which are essential to the process of digestion.

The *jejunum* and *ileum* constitute the remaining portion of the small intestines, and occupy the lower and middle part of the abdomen, and are encircled by the large intestine, which is also divided into three parts, the *cœcum*, the *colon*, and the *rectum*. The jejunum is ten to twelve feet in length, while the length of the ileum is sixteen to eighteen feet. The ileum terminates in the *cœcum*, or commencement of the large intestines.

The small intestines are the seat of an important function. It is in them — but principally in the duodenum — that what is called the *chyle*, is separated from the balance of the food, and is taken up by a set of little vessels called *absorbents*, or *lacteals*, and finally conveyed into the blood, for the nourishment of the body. These vessels are very numerous, and open their mouths upon the internal surface of the mucous membrane of the bowels. They will be more fully described hereafter.

The large intestines, as I have said, are divided into *cœcum*, *colon*, and *rectum*. The cœcum is only a sort of *pouch*, about three inches in length, which receives the lower end of the ileum. It is situated in the lower part of the abdomen, at the right side, just within the hip-bone, where it is tied down so as to be unable to get out of its place.

The *colon* commences at the cœcum, taking an upward course along the right side, toward the liver, where it turns and crosses from the right to the left side immediately below the stomach, and above the small intestines, constituting what is termed the *arch of the colon*. It then makes another turn, and descends along the left side of the abdominal cavity, terminating opposite the cœcum in a sort of double curve, called, from its resemblance to the letter S, the *sigmoid flexure*. The *rectum* is a continuation from the sigmoid flexure — is about eight inches long, and is the lower extremity of the intestines.

THE GLANDULAR SYSTEM.

The glands are soft, fleshy, organized parts, having arteries, veins, nerves, and absorbents, and are designed to separate some peculiar fluid from the blood, which is needed for some of the various operations of the system, or is to be rejected from the body. The process by which such fluids are separated from the blood, is called *secretion*.

The glands differ greatly, both as to size and shape, and in the

character of the fluids they secrete. The largest gland in the body is the *liver*, which secretes the bile. The female breast is also a gland, designed for the secretion of milk. The kidneys also are glands.

The Mucous Glands.— These are a numerous class, are very small, consisting of little bags, formed by a peculiar membrane, and open by minute *ducts*, through which they discharge their contents. They are distributed upon the mucous membrane of the tongue, and that which lines the nose, windpipe, stomach, intestines, and bladder, furnishing a peculiar kind of fluid, called *mucous*, with which those parts are lubricated.

The Sebaceous Glands are similar in structure to the mucous glands, but secrete an oily or fatty fluid, which forms the *suet* or fatty portion of the body.

Of the **Salivary Glands,** there are three pairs — so called because they secrete the *saliva*, or *spittle*. The principal of these are the *parotid glands*, situated, one on each side, immediately back of the angle of the lower jaw, between that and the ear. They open by a duct upon the inner surface of the cheek, and furnish the principal amount of the saliva, which serves to moisten the food while undergoing the process of mastication or chewing. These glands are the seat of the *mumps*. The next pair are the *submaxillary* — seated under each angle of the jaw, and open by a duct into the mouth, on each side of what is called the *frenum*, or bridle of the tongue. The other pair are the *sublingual* glands, so called because situated under the tongue, near its back part. They have several ducts, by which their secretion is poured into the mouth.

The Lymphatic Glands appear to have no other office than that of receiving and transmitting the lymphatic vessels. They have no excretory ducts. They are very numerous throughout the system, the largest and most familiar to us being situated in the groins, the armpits, and along the sides of the neck. In the neck they often become swollen in Scrofulous affections, and form large Tumors — sometimes Ulcers. The glands of the armpit and groin are also liable to become diseased. We now come to the larger glands.

The Liver.— The liver is of a brown red color, and in a healthy grown person weighs near four pounds. It is situated in the upper portion of the abdominal cavity, mainly in the right side, under the ribs, and is divided into two principal *lobes*, called the right and left. Its upper surface is convex, or rounded, and corresponds to the concavity of the diaphragm, to which it is attached by several ligaments. Its lower surface is hollow or concave, and is in connection with the stomach and duodenum. Its right lobe is principally thick and massy, but its left is thin, and spreads itself smoothly over the stomach.

In some diseases the liver becomes enlarged and *indurated*, or hard, and may be felt projecting below the ribs in the right front of the abdomen, and sometimes even on the left. It may, however, be pushed down by the diaphragm so as to appear like an enlargement, in diseases of the chest, as Dropsy, when the liver itself is not diseased. It is altered materially in its texture by the processes of disease, becoming in some cases quite soft, and in others extremely hard and firm; and in some instances it acquires an enormous size, weighing from twenty to thirty pounds.

The liver is supplied with bloodvessels, nerves, and absorbents, and has for its office the secretion of *bile*, which plays an important part in the process of digestion.

The Gall Bladder, belonging to the liver, and attached to the under side of its right lobe, is a membranous bag, or receptacle, large enough to contain one to two ounces of fluid, called the *gall-bladder*. This seems to serve as a kind of *reservoir* to receive the surplus bile from the liver, during the intervals of digestion.

The bile is secreted in the liver, and is conveyed by innumerable little tubes to what is called the *hepatic duct*, through which it passes on its way to the duodenum. From the gall bladder, or *cyst*, as it is sometimes called, proceeds also a duct, called the *cystic duct*, which unites with the hepatic duct between the liver and the duodenum, forming what is termed the *common duct*, which enters the duodenum about four or five inches from the pyloric orifice.

The Kidneys.—The kidneys (there are two) are of a dark red color, and resemble in shape a certain kind of bean known as the kidney bean. They are five to six inches long, and three to four inches wide, and are situated one on each side of the spine, in the back and upper part of the abdominal cavity, their upper half stretching across the two lower false ribs, and having their upper end in contact with the lower side of the diaphragm. It is owing to this fact—their contact with the diaphragm—that pain is felt in breathing when the kidneys are inflamed.

The office of the kidneys is to secrete the urine, which is collected in little tubes and poured into what is called the *pelvis* of the kidney—a cavity in its center—whence it passes out through the ducts or tubes called the *ureters*—one leading from each kidney, and is emptied into the bladder, which is situated in the bottom of the abdominal cavity and is the receptacle of the urine, where it is collected and retained until discharged from the body.

The Spleen.—The spleen is a soft spongy body, of a dark purple color, situated above and in front of the left kidney, and immediately to the left of the stomach, to which it is connected by small bloodvessels, and by the cellular membrane. It also has an attachment to

the lower edge of the diaphragm, near the spine. The spleen varies in size, but is generally about four inches long, three inches wide, and two inches thick. In the animal, this organ is generally called the *melt.*

The spleen sometimes becomes greatly enlarged, and may then be felt below the ribs, to the left of the stomach. This often occurs in Typhus Fevers, and protracted cases of the Chills, or Ague—particularly if much *Quinine* has been taken. It is plentifully supplied with bloodvessels, but has no excretory duct, or outlet. The real use of the spleen is, as yet, unknown. It has been removed in animals, without being followed with any bad result.

The Pancreas.—The pancreas, which is known in the animal as the *sweet-bread*, is also a glandular body, of a pale red color, bearing a resemblance in shape to the tongue of a dog. It lies across the spine, immediately behind the stomach, and is in contact at its smaller extremity with the spleen. It has an excretory duct, which opens into the duodenum in connection with the hepatic duct from the liver. The office of the pancreas is to secrete what is called the *pancreatic juice*, a fluid somewhat similar in appearance to the saliva, and pour it into the duodenum, which is supposed to be necessary in the process of digestion.

The Absorbents.—The absorbents are small, delicate, transparent vessels or tubes, which exist in every part of the body, and are denominated *lacteals* or *lymphatics*, according to the liquids which they contain.

The lacteals open on the inner surface of the intestines, and suck up or receive what is called the *chyle*, a milk-like fluid of which the blood is formed, and convey it to what is called the *thoracic duct.* In their course they perforate the middle and outer coats of the intestines, pass through the mesentery, and mesentery glands, and terminate in this duct. The lacteals are an important set of vessels, for it is through their agency that the chyle or nutritious part of the food is separated from the refuse, or innutritious, and conveyed to the blood, to nurture and replenish the system. It is probably a *reverse action* of these vessels that constitutes *Cholera;* or, at least, I am persuaded that such a condition exists in that disease.

The lymphatic vessels arise from every part of the body, and contain a whitish, transparent fluid denominated *lymph.* They form, together with the lacteals, what is called the *absorbent system.* They are extremely small and delicate, and can not readily be seen with the naked eye. They pass through what are termed the *lymphatic glands*, and in common with the lacteals, terminate in the thoracic duct.

The lymphatics take up fluids from different cavities and parts of the body, and carry them into the circulation, and it may therefore

be readily supposed that they often prevent the occurrence of Dropsies. They may be compared to a greedy set of little animals, ready to lay hold of and carry off everything that comes in their way. They seem to have no judgment as to what is good and healthy, but will absorb poisonous and deleterious substances, as well as the most nutritious. It is well known that Mercury rubbed on the skin in the form of ointment, may be absorbed, and produce Salivation as effectually as if taken internally. Croton Oil rubbed on the abdomen produces Purging, and Arsenic applied to Cancers, and Opium to Burns, have been absorbed in quantities sufficient to poison the patients. Blood effused under the skin, or nails, producing a dark appearance, is removed by these little vessels. Their office seems to be that of general usefulness, ready to take up and carry off any refuse material, dead matter, or unhealthy deposit, in any part of the system.

Thoracic Duct. — The thoracic duct, which may be regarded as the *trunk of the absorbents*, because it receives the absorbent vessels from almost every part of the body, including, of course, the lacteals, though small — being only about the size of a goose-quill in diameter — is a very important organ in the human organization. It commences at the lower end and back part of the abdominal cavity, and passes upward along the spine, by the side of the aorta, as high as the lower part of the neck, on the left side, or opposite the sixth cervical vertebra, where it makes a sudden turn downward and forward, and enters the *left subclavian vein*, just under the left clavicle, or collar-bone. It pours its fluid, the chyle, into the current of the venous blood, going direct to the heart.

THE NERVOUS SYSTEM.

The nervous system consists of the brain, the spinal marrow, and the nerves which go off with them.

The Brain. — The brain is the seat of the nervous sensation and of the intellect. It is contained within the skull, and is divided into two parts, called the *cerebrum*, or great brain, and the *cerebellum*, or little brain. The first is situated in front and above the level of the ears; the other below that level and in the back part of the cranium. The cerebrum is divided into two hemispheres, the right and left, by a cleft, or fissure, extending from the top down nearly or quite two-thirds of the way through it; and into this fissure a portion of the dura mater, or lining membrane of the skull, dips, serving as a partition between the hemispheres. The portion of membrane which thus dips into the fissure, is called *falx cerebri*, from its resemblance to a sickle. Upon its inferior, or lower surface, the cerebrum is divided into three *lobes*, the anterior or front, the middle, and the posterior

or back lobe. The two hemispheres are connected by a dense layer of transverse fibres, called *corpus callosum.*

The brain is surrounded by three membranes, called the *dura mater*, the *arachnoid* membrane, and the *pia mater.* The dura mater—which means *strong mother* — lines the inner surface of the skull, and is, as its name indicates, a strong, dense membrane, having a bright, silvery appearance. Next, we have the *arachnoid*, which is the serous membrane of the brain. Though it is double, like all the serous membranes, it is very thin and delicate. The *pia mater* is a soft vascular membrane, which immediately surrounds and invests the whole surface of the brain, and dips into its convolutions. It is copiously supplied with bloodvessels, which afford nourishment to the brain.

The substance of the brain does not, as is sometimes supposed, consist exclusively of a white, pulpy mass, but is more or less fibrous in its structure, and is of two different colors. Upon the upper and outside surface of the cerebrum (the membranes having been removed), the appearance is that of undulating windings, producing small rounded protuberances, called *convolutions.* Remove a portion of the upper part of the brain, horizontally, with a sharp knife, cutting through these convolutions, and we have presented a white substance in the center of each convolution, while the outside portion, to the thickness of a quarter to a half inch, is of an ashy gray appearance—and is called the corticle, or *cinericious* portion, while the white central portion is called the *medullary.* In the interior of the brain are several cavities, the two largest of which extend from the anterior to the posterior of the brain, and are called the *lateral ventricles.* An effusion of serum, or water, is sometimes deposited in these cavities from the small bloodvessels of the membrane which lines them, producing internal Dropsy of the Brain.

The cerebellum is only about one-seventh as large as the cerebrum, and, like that, is composed of white and gray matter, but, unlike it also, the gray constitutes the larger portion. The white matter in the cerebellum is so arranged, that when it is cut through vertically, that is, up and down, it presents the appearance of a trunk and branches of a tree. Hence it is called *arbor vitæ*, or *tree of life.* The cerebellum is situated under the posterior lobe of the cerebrum, and is separated from it by an extension of the dura mater, which is here called the *tentorum.*

At the bottom of the brain is a sort of bulb, some larger than a man's thumb, called the *medulla oblongata.* It is composed of three pairs of small bodies, called *corpus pyramidale*, *restiforme*, and *olivare*, all united together under one body. The medulla oblongata is simply the commencement of the spinal marrow, or that portion of it *within the skull.*

The brain is the foundation upon which the science of Phrenology is based; the moral and intellectual, as well as the physical character, depending upon the quality of its texture, and the relative size and development of its various organs, or convolutions.

The Spinal Cord.—The spinal column, which is composed of the vertebræ, or bones of the back, contains the spinal cord, the roots of the spinal nerves, and the membranes of the cord.

The spinal cord, or, as it is sometimes called, the spinal marrow, extends from the *medulla oblongata* through the opening or canal in the spinal column, down to the second lumbar vertebra, which is just below the small of the back, where it terminates in a round point, or bundle of nerves. It is similar in structure to the brain; indeed, it is a continuation of the brain, and is also inclosed in a continuation of the three membranes of that organ. It is round, larger at the top than the bottom, and has three enlargements; the uppermost of which is the *medulla oblongata*, the next where the nerves leave it which go to the upper extremities, and the third where the nerves of the lower extremities branch off.

The spinal cord is partially divided by an anterior and posterior fissure, into two lateral cords, which are only united by a thin layer of white medullary substance. These lateral cords are each divided by furrows into three distinct parts, or columns, called the *anterior*, the *lateral* and the *posterior* columns. The anterior are supposed to be the *motor* columns or origin of the nerves of motion; the posterior the columns of *sensation;* while the lateral or side columns are devoted to the function of both motion and sensation.

The Nerves.—The nerves are numerous long, round, white cords, of various sizes, which originate in the brain and the spinal cord, and are distributed in every direction to all parts of the body. They communicate freely with each other, thereby forming an extensive network, and become so numerous in their ultimate ramifications, that you cannot prick the skin or flesh with the finest needle without wounding one or more of their branches, and producing pain. The *great sympathetic nerve*, however, instead of having but one center or origin, has many small centers, called *ganglia*, and also numerous communications with the brain and spinal cord.

The great attributes of the nervous system are the capacity of receiving impressions, the endowment of thought and feeling, and the power of putting the muscular machine into action; in other words, the nerves possess the attributes of sensation, thought, and motion. They can not act, however, independent of the brain. If a nerve, for instance, leading to any sensitive part, be cut, that part will immediately lose its sensibility, because the communication between it and the brain is destroyed. So also if the motor nerve

leading to any part be cut, or so injured or compressed as to stop the flow of the nervous fluid, that part will lose the power of motion, for the same reason. Every sensation and motion, of whatever nature, requires the intervention of the brain. Light may make an impression on the eye, sound on the ear, or some object on the nerves of feeling or touch, but this impression must first be conveyed to the brain, along the nerves, before sensation is effected. If the skull become fractured so as to compress the brain, all consciousness and feeling are lost until the compression is removed. Narcotics, such as Opium, are sometimes given for the purpose of producing a temporary relief of pain, but instead of removing the cause of the complaint, they only stupefy the brain, and render it incapable of receiving an impression from the nerves — hence, there can be no pain felt while the brain is in this condition.

The various organs of the body are supplied with nerves, which are essential to the proper performance of their functions. If the nerves which are distributed to the stomach were cut, the process of digestion would be arrested. The heart would cease to beat if its nerves were divided, for it is through these nerves that the heart is acted upon by the brain, and made to propel the vital fluid throughout the system. But for these mysterious cords, these electric wires, which connect all parts of the body with the brain, we could neither see, hear, taste, or exercise any of the senses; indeed, we could not exist.

The nerves are divided into the *sensible* and *insensible;* the *voluntary* and *involuntary*. The first convey sensibility to the parts to which they are distributed, as the nerves of the skin; the second, like the brain itself, are destitute of sensibility, and exhibit no pain when wounded. The nerves of sight and hearing are of this class. They are capable of being acted upon, however, by *light* and *sound*.

The *voluntary nerves* are those which control the voluntary action of the muscles, as those of the leg and arm. Hence, they are the nerves of voluntary motion, and are governed by the will. The *involuntary nerves* are such as are not under the control of the will, but that act independently of it, as the nerves of the heart, the stomach, etc.

Nerves of the Brain.— There are twelve pair of nerves which originate in the brain. They nearly all pass out through openings for that purpose in the base of the skull. Their names and manner of distribution are as follows:

First pair, the *olfactory* nerve, or nerve of smell. It ramifies upon the membrane of the nose.

Second pair, the *optic* nerve, or nerve of sight. It expands on the retina of the eye.

Third pair, called *motores oculorum*, goes to the muscles of the eye.

Fourth pair, *patheticus*, goes also to the muscles of the eye.

Fifth pair, called *trifacial*, because of its dividing into three branches before leaving the skull, all of which go to the face, jaws, mouth, teeth, nose, and forehead.

Sixth pair, called *abducentes*, the smallest of the nerves of the brain, and is apportioned to a single muscle of the eye.

Seventh pair, the *facial* nerve (*nervus facialis*), is distributed over the muscles of the face and the external ear, and also sends some small branches to the internal organs of the ear.

Eighth pair, the nerve of *hearing* (*nervus auditorius* or *acusticus*). A sensitive nerve, which is susceptible of sound only.

Ninth pair, called *glosso-pharyngeal*, goes to the mucous membrane of the tongue, throat, and to the glands of the mouth.

Tenth pair, the *pneumogastric;* this pair sends branches to the throat, lungs, spleen, pancreas, liver, stomach, and intestines.

Eleventh pair, called the *hypo-glossal* nerve, goes to the muscles of the tongue, and is its motor nerve.

Twelfth pair, called *spinal accessory*, connects, on emerging from the *foramen jugulare* (jugular opening) with the branches of the ninth and tenth pair, which lead to the pharynx and distributes itself upon the muscles about the neck. It may support breathing.

Nerves of the Spine.— The nerves that originate in the spinal cord are arranged in thirty-one pairs, each nerve arising by two roots, one from the anterior portion of the cord — which is the *motor* root — and the other the *sensitive* root, from the posterior side of the cord. There is what is called a *ganglion*, that is, a small *bulb* or *enlargement*, found on each posterior root, soon after it leaves the spinal cord. Immediately beyond this ganglion the two roots unite and constitute a spinal nerve, which passes through the opening between the vertebræ on the sides of the spinal column, and thence divide and subdivide, till their minute branches are lost upon the tissues of the different organs to which they are distributed.

The first eight pairs of spinal nerves are called the *cervical nerves*, because they originate within the cervical vertebræ; the next twelve pairs, for a similar reason, are denominated *dorsal nerves;* the next five, *lumbar nerves*, and the remaining six, *sacral nerves*.

The four lower cervical and the upper dorsal pass into each other, and then separate to unite again, thus forming what is called the *brachial plexus*. Six nerves proceed from this plexus, which ramify the muscles and skin of the upper extremities.

The last dorsal and the five lumbar nerves form a similar plexus, called the *lumbar plexus*. From this plexus six nerves also go out, which ramify upon the muscles and skin of the lower extremities.

The four upper sacral unite and form the *sacral plexus*, which sends out five nerves to the muscles and skin of the hips, and the lower extremities.

The Great Sympathetic Nerve.—This nerve is so called from its numerous connections with different parts of the body. It arises from a branch of the sixth, and one from the fifth pair of cerebral or brain-nerves, which unite into one trunk and descend along the spine to the lower end of the sacrum. It communicates by branches with each of the spinal nerves, and with several of the cerebral, and also sends off branches to the different organs contained in the chest and abdomen. Below the vertebræ of the neck it has a ganglion for each intervertebral space, which are supposed to form nervous centers, giving off branches in different directions.

The branches of this nerve accompany the arteries that supply the different organs of the abdomen, and form *plexuses* around them, which take the name of the particular artery with which they are connected—and thus we have the *mesenteric* plexus, the *hepatic* plexus, the *splenic* plexus, etc. All the internal organs of the head, neck, and trunk, are supplied with branches from it. The sympathetic nerve is supposed to be the *nerve of organic life*, and to preside over nutrition, secretion, the action of the heart, and circulation of the blood, as well as to maintain a communication between different parts of the body, and to be the connecting link between the brain and the abdominal viscera.

Ganglia and intercommunicating bundles of nerve-fibres exist in every part of the intestinal canal of man and the higher animals. No nerve ganglia exist very near the ultimate distribution of the nerves to the small arteries of the skin of the body and to the tissues of the limbs; these nerves are all connected with nerve-centres, exhibiting the same general structure and arrangement as those found in connection with the mucous membrane of the intestines and other viscera of the abdomen and thorax. All belong to the so-called Sympathetic system. Nerve-centres or ganglia are placed in certain special parts of the trunk, and from these bundles of nerve-fibres are derived which are distributed to the vessels of the head and extremities. The minute arteries by which blood is distributed to the muscles of the limbs, to the large nerves, to the brain and spinal cord and their membranes, are as fully supplied with nerves, and are as much under the influence of nerve ganglia of the sympathetic system, as are the arteries of the lungs or the heart, or those of the liver, kidney, or other secreting organs. The arteries are not the only small vessels which are supplied with nerve-fibres. It has long been known that to the coats of the small veins nerve-fibres are abundantly distributed, but the general arrangement of the finest fibres has not been fully investigated. They exist in great number, and, indeed, in much greater number than would be expected, considering the paucity of the muscular fibres of the veins and the thinness of the coats of these vessels.

PHYSIOLOGY AND THE LAWS OF HEALTH.

WASTE AND SUPPLY OF THE BODY.

THE human body is constantly undergoing change. The living machine is in continual motion from birth till death; this movement produces friction, attrition and wearing away; particles become decayed and useless, and are cast off, to be replaced by new ones. Whether asleep or awake, sick or well, this wearing out and change of particles goes on. In the expressive language of Dr. Watts, the poet and philosopher—

> "The moment we begin to live,
> We all begin to die."

This is strictly true, applied physiologically to the particles which compose our bodies. But it is also true, that while we are dying we are also reviving; that while our bodies are constantly wearing out and decaying by particles, they are as constantly being regenerated and renewed by particles. And this change, this perishing and renewing of particles, goes on in every part of the body—in every bone, muscle and tissue, so that in the course of time, it must be evident, our bodies become entirely renewed. It has been said that this renewal of the entire body takes place, or is completed, once in every seven years. But there is no certainty in this. The probability is, that in some cases, as in active, healthy children, it is effected in much less time; while in others, as the aged, or the lazy, corpulent, inactive adult, it may require twice or three times seven years. But whether the process requires seven years, or seven times seven, the constant decay and renewal of the body is a well-established doctrine of Physiology.

Before proceeding to the subject of Nutrition, let us first see what becomes of these worn-out and useless particles, for it is very proper that every one should understand this. The body does not decay and wear away upon the outside merely. If it did, the decayed particles would rub off and be lost—a very simple process. But, as I have said, this decay of particles goes on in every part and tissue of

the body, internally as well as externally. Now it is plain, that unless there was some plan provided, some wise arrangement for the removal of these useless particles from the body, the most serious consequences might ensue. They are not only of no further service, but if retained, must act as foreign matter, and produce irritation, fever, inflammation, and perhaps would putrefy and poison the whole system. But the necessary provision has been made. All over the body, and all through it, there is distributed a set of little vessels, with their mouths opening on the internal surfaces of all the cavities, tubes, and membranes, and which are continually sucking up and carrying off every dead particle and all foreign matter they can lay hold of. These little vessels are called ABSORBENTS, and have been described in the proper place. The greater portion of them open into the bloodvessels, and consequently pour their contents of decayed and refuse matter into the blood. From the blood a portion of it is separated by the kidneys, and passes directly out of the body. Some is thrown into the bowels, and passes out in that way. But by far the largest proportion is eliminated from the body through the pores of the skin, with the perspiration. A free and healthy action, therefore, of the absorbent system, is very essential to the health of our bodies. If the kidneys fail to secrete their share of the waste material, it is retained in the blood, and is carried round in the circulation and distributed to all parts of the system, to become the source of irritation and poison, and may show itself on the surface in blotches, sores, and inveterate eruptions ; or it may be thrown upon the lungs and lead to Consumption. But, above all, it is important that the outlet through the skin, through which the greater portion of these decayed particles have to pass, should be constantly maintained in a proper and healthy condition. This part of the subject, however, comes under the head of "Perspiration and Exhalation," and will be noticed in its proper place.

Having seen that our bodies are constantly wearing out, and also the manner in which the dead particles are removed, we come directly to the subject of Nutrition, or Supply ; for it must be evident, that if we are continually losing particles of our bodies, there must be some way to supply new particles to take their place, or we should, in the course of time, become "mere skeletons," or entirely wasted away. In order to maintain a proper balance between supply and waste, and have all things go on in a healthy condition, we must be as constantly receiving new particles from some source or other, as we are losing old ones. And in childhood and youth, while the body is growing, it is evident that the supply must be greater than the loss. Whence comes this supply ?

NUTRITION.

NUTRITION is the renewal of the materials of which the different parts of the body are composed. The circulation, digestion, and respiration, are the three great agents in this vital process. The blood, however, is the immediate source of nutrition. Every thing of a nutrient character, whether for bone, muscle, nerve, ligament, or other tissue, must first be converted into blood, or incorporated with that fluid, before it can be applied to its intended uses; the nutritive process is simply a kind of secretion, by which particles of matter are separated from the blood, and conveyed with wonderful accuracy to the particular textures of which they are suited. The nutrient vessels which separate these particles of new material from the blood, may be said to antagonize with those of absorption: while the one class, with most beautiful precision, are constructing and renovating the animal frame, the other are as diligently engaged in pulling down and removing the old material. The process of nutrition, or separating new material from the blood and applying it to the appropriate textures, as bone, muscle, ligament, etc., is effected by a set of minute vessels, the smallest in the human body — so small that they can only be detected through the aid of a powerful microscope. They are the smallest of the capillaries.

"As the blood goes the round of the circulation, the nutrient capillary vessels select and secrete those parts which are similar to the nature of the structure, and the other portions pass on; so that every tissue imbibes and converts to its own use the very principles which it requires for its growth; or, in other words, as the vital current approaches each organ, the particles appropriate to it feel its attractive force — obey it — quit the stream — mingle with the substance of its tissue — and are changed into its own true and proper nature." And thus bone attracts from the blood, through its capillaries, the material suitable to make bone, and muscle that which is suitable to make muscle, and so on throughout the different tissues of the body.

Of course, all nutrition is derived ultimately from the food we eat, and consequently involves the process of digestion; but the immediate, direct agent for making, developing, sustaining and renewing the body, is the blood. This being the fact, we speak first of that fluid, and its circulation; after which it will be necessary to inquire where and how the blood itself is furnished with the elements of nutrition — which will lead us a step further back, to the subject of Digestion and assimilation of food, thus reversing the order usually pursued by writers on this subject.

The Blood.— The blood is that fluid which circulates in the heart, arteries, capillaries and veins. In the arteries it is of a bright red or

light vermillion hue, while in the veins (except those which convey it from the lungs to the heart) it is of a dark red or purple color. The quantity of blood in the body of an adult person is estimated to be about twenty-five to thirty pounds. Its temperature, in a state of health, is about 100 degrees, Fahrenheit. In some diseases, as Scarlet, and other Fevers, it rises five to ten degrees above this; while in some others, as the Cholera, it falls twenty to thirty degrees below it.

The blood is the most important fluid in the body, for it is not only the sole material from which every part of the body is made, but it furnishes the various secretions, as bile, pancreatic juice, saliva, etc., and is the source of animal heat, diffusing warmth throughout the system, and maintaining the temperature of the body at a uniform standard, amid the various changes of heat and cold.

The blood contains an immense number of little red globules, which can only be distinguished through a microscope, and which contain, or rather constitute, its coloring matter. When drawn from the body and allowed to rest, it separates into two parts, one of which is solid, or of a jelly-like consistence, and is called the *crassamentum*, or *clot*. This part contains the red globules. The other is a watery, transparent fluid, of a slightly yellowish hue, and is called the *serum*. The serum is said to constitute fully one-fifth of the blood, in a healthy state of the body. In diseases generally, the proportion of serum is increased; consequently, there is a diminution of the healthy and nutritive properties of the blood, as the serum is but its watery portion, and probably serves only as a solvent for foreign substances, and as a medium in which to suspend the red globules.

Upon washing the crassamentum, the coloring matter disappears, and a whitish substance remains, called *fibrine*, which is the principal material of which the muscles are formed, and probably other portions of the body.

So important is the blood to health, and even the existence of our bodies, that it was said by the ancients that "the blood of the body is the life thereof." Whether this be true wholly, or only in part, it is very certain that we can not live, even for one short hour, without this wonderful fluid.

Circulation of the Blood.— Extraordinary as it may seem, it is only a little over two hundred years since the circulation of the blood was discovered. This discovery, as the reader is probably aware, was made by William Harvey, an eminent English physician. So strong is the force of prejudice, and so difficult is it to discard preconceived opinions, that instead of receiving the meed of praise from his professional brethren for this brilliant and important discovery, he was violently persecuted by them — so much, even, that it is said he was

obliged to retire to an obscure corner of London, and finally lost nearly the whole of his practice. In his history of England, Hume remarks, that no physician in Europe, who was over forty years of age at the time, ever adopted Harvey's doctrine of the circulation. Yet, where is the physician now, or person with any pretention to science, who doubts it? No doctrine in Physiology is better established or more generally understood, than that of the circulation of the blood.

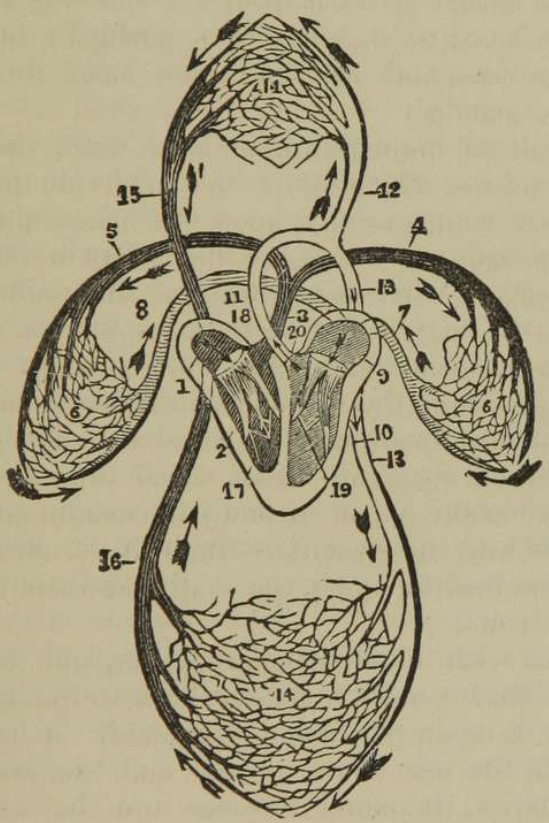
The heart, as has been said, is properly a double organ, having two sides or compartments, in each of which there are two cavities, one called the auricle and the other the ventricle. By the muscular contraction and relaxation of the heart, producing alternate diminution and enlargement of these cavities, the blood is forced first from the auricles into the ventricles, and then from the ventricles into the arteries. The dilatation of the ventricles is called the *diastole* of the heart, and their contraction its *systole.*

In describing the circulation of the blood, the right auricle of the heart may be regarded as the proper starting point, as it is the cavity which receives from the veins the blood from all parts of the body, after it has gone the round of the circulation. It is with this auricle that the two great veins (upper and lower vena cava) connect, and into this they discharge their contents of venous blood, which is now of a dark red, almost black color, and is unfit for the nourishment and growth of the body until it has been renewed and purified in the great laboratory of the lungs. From here the blood is forced by the contraction of the auricle through an opening into the *right ventricle*, which is situated immediately below it. The right ventricle in its turn contracts and forces the blood into the *pulmonary artery*, and through it and its branches *to the lungs.* Inside of this ventricle are what are called the *tricuspid valves*, which close upon the entrance from the auricle and thus prevent the blood from regurgitating, or returning to the auricle when the ventricle contracts. There is a similar provision in the pulmonary artery, called the *semi-lunar valves*, which prevent the blood from returning to the ventricles when it dilates or relaxes.

In the lungs the blood undergoes its great change. It here becomes what may be termed *oxygenized* and *decarbonized;* that is, charged with oxygen, and freed from its carbon, and thereby changed from a dark purple to a bright red color, and rendered fit for re-circulation, and all the purposes of nutrition. This change is effected by the action of the atmospheric air, taken into the lungs in breathing. The pulmonary arteries divide and subdivide into innumerable branches, which distribute themselves to all parts of the lungs, and finally lose themselves in the minute *capillaries.* These little vessels surround

the air-cells of the lungs, forming a kind of net-work around them; so that when air is taken into the lungs, and these cells are filled witn it, a chemical action takes place between the blood and the air. The cells and the capillaries are so very thin, that oxygen escapes through them from the air, and unites with the red globules, or iron of the blood, producing a *red oxyd of iron;* while at the same time the carbon which the blood has taken up in its round through the body, and which gives to it its dark color, is either burnt up by the oxygen, or escapes through the air-cells and passes out along with the breath

FIG. 10.



AN IDEAL VIEW OF THE CIRCULATION IN THE LUNGS AND SYSTEM.

1. Right auricle; 2, right ventricle; 3, pulmonary artery; 4, 5, left and right branches, going to the lungs; 6, 6, the capillaries of the lungs; 7, 8, pulmonary veins, returning blood to left auricle of the heart; 9, left auricle; 19, left ventricle; 11, 20, aorta; 12, 13, 13, branches of aorta, ascending and descending; 14, 14, the capillaries, into which the arteries terminate, and from which the veins rise; 15, 16, descending and ascending vena cava. ☞ The arrows show the course of the blood.

when ejected from the lungs. Thus the blood becomes purified and ready for use again. It is now of a bright red color.

From the capillaries of the air-cells the blood now passes into the minute extremities of the veins, which unite with them the same as

the arteries, and thence into the two *pulmonary veins* which convey it direct to the *left auricle* of the heart. This auricle then contracts, and forces the blood down into the *left ventricle*. In this ventricle are what are called the *mitral valves*, which prevent the blood from returning to the auricle. The left ventricle then contracts and forces the blood into the *great aorta*, through which, and its numerous branches and their subdivisions, it is distributed to every part of the body. There is also a valve within the mouth of the aorta, the *semi-lunar*, which prevents the blood from reflowing into the ventricle. The difference between the functions of the pulmonary artery and the aorta is, the former proceeds from the *right* ventricle and distributes only *impure* blood to the lungs, to be purified ; the other connects with the *left* ventricle, and distributes *pure* blood to all parts of the body, the lungs included.

The aorta sends off branches to the head, neck, viscera, and upper and lower extremities, which divide and subdivide into innumerable smaller branches, which ramify upon the bones, muscles, skin, and every part of the body, until they are finally lost in the little capillary vessels, the same as the extremities of the pulmonary arteries. Every tissue of the body is full of these capillaries, which form the connecting link between the arteries and the veins. It is while the blood is passing through these, that its nutritive properties are taken up and assimilated to the different parts of the body, by a still smaller set of vessels, which open into these, called the *nutritive capillaries*. In this way the blood is made to nourish, sustain, and replenish the system. In this way the growth of the body is effected, and all the new particles obtained to supply the continual waste that is going on in the various tissues.

Having parted with its nutritive properties, and also lost much of its oxygen, the blood is ready to be sent back to the heart, and thence to the lungs, to be again purified and renewed. It has again become quite dark, from the loss of its oxygen, and the presence of carbon. From the capillaries, therefore, it passes into the extremities of the veins, and thence is collected from all parts into larger veins, all of which terminate at last in the two large trunks, the ascending and descending vena cava, from which it is poured into the right auricle of the heart, and is ready to proceed on the rounds we have just described. This is THE CIRCULATION OF THE BLOOD.

The motive power that forces the blood through the arteries is the contraction of the heart, or of its ventricles. This force or influence is felt to the very extremities of the arteries; for what we call the *pulse*, is nothing more than the motion or wave in the artery — the *impulse* caused by the beating or contracting of the heart. The ventricles of the heart contract, or the pulse beats, about seventy times

every minute, in an adult; in children much oftener, and in old age less than that. At every stroke of the heart it is estimated that it forces two ounces of blood into the aorta; and if it contracts at the rate of seventy times a minute, it will only require about three minutes at most for all the blood in the body to pass through the heart, and, consequently, to go the rounds of the circulation.

The influence which returns the blood to the heart, through the veins, is not so well understood. Indeed, there is nothing satisfactory known on the subject. We know that it is so returned, and that, therefore, Nature has some sufficient plan for doing it — and this is about all we do know in regard to it. There have been various theories proposed by physiologists, the most probable of which I regard that of nervous or electrical influence, and the muscular contraction of the veins themselves.

As the blood is the medium through which every part of the body receives its nutriment, and as this nutriment is extracted from the blood while it is passing through the minute vessels at the extremities of the arteries, it is evident that in order to have health and strength of the body, there should be a full and free distribution of this fluid to all the parts. To secure this, a proper degree of daily exercise is necessary. The skin should be kept clean, and sufficiently warm, so that the capillaries next the surface do not become closed or congested by chill or cold, or the blood may be concentrated upon internal parts, and debility or disease be the result. Next to having a supply of good, rich and healthy blood, it is important that its circulation be equal; that is, properly and equally distributed to all parts. In case of unequal circulation, the extremities cold, particularly the feet — skin pale or sallow, with other symptoms usual in such cases — rely on ablutions of the body, warm and cold baths, friction upon the surface, and plenty of out-door exercise, to restore the equilibrium, and bring back the health. They will be found better than all the drugs and patent medicines in the country.

DIGESTION.

Although the blood, as we have seen, is the immediate agent of nutrition, by which the body in all its parts is sustained and developed, yet the blood itself, with all its elements of nutrition, is derived from the food we eat. This change of foreign substances, what we eat and drink, into the material of the body, is one of the most extraordinary phenomena in Nature, and is eminently worthy of our study, both as a matter of interest and of utility. When we recollect how various are the articles of food, and how dissimilar most of them are to the blood, it seems scarcely possible that such a change could

occur. Yet it does occur daily in our own bodies, although we are unconscious of it. Though we are not acquainted with the precise means by which Nature performs this function, or indeed any function, we can point out the organs employed, and the different changes the food undergoes in each one. Commencing, then, with the food on the table, we will follow it from the time it is received into the mouth, noting all the processes and changes through which it passes, until it is finally converted into blood, and building material for the body.

The first stage of the process of digestion is that of *mastication*, which consists in chewing or grinding the food, and thus preparing it for entering the stomach. The act of mastication is so well understood that it needs no description, more than to say that it is materially aided by a fluid called *saliva*, or spittle, which is secreted by certain organs heretofore described, called salivary glands. As soon as food is taken into the mouth, and the act of chewing commences — particularly if it be dry food — these glands begin to secrete and pour into the mouth, through their little ducts, this fluid, which serves to moisten the food and help reduce it to a condition suitable for entering the stomach. The saliva also aids in the process of digestion after the food has passed into the stomach.

The next act after mastication is that of *deglutition*, or swallowing, which is also too well understood to need special description. It is proper, however, to remark here, that the food should be well masticated and thoroughly moistened with the saliva before it is swallowed. The habit of taking fluids, as tea, coffee or even water, along with our food, is by no means a good one. The less fluids of any kind we take at meals, the better. One reason of this is, that fluids taken into the mouth along with food, *prevent the flow of the saliva.* The saliva is a provision of Nature for moistening food ; but if the mouth is already full of water, or any other foreign liquid, the saliva will not enter. If drinks must be taken at meals, *drink only when there is no food in the mouth — after it has been masticated and swallowed; or, still better, after the meal has been finished.* There are serious objections to the use of fluids at our meals, which will be mentioned as we proceed.

Chymification. — Soon after the food enters the stomach, which it does through a pipe or tube called the *œsophagus*, it undergoes the first part of the real process of digestion, by being converted into a homogeneous, semi-fluid mass of grayish pulp, called *chyme.* The previous processes of mastication and deglutition, are but preparatory ones. The stomach, as has been said, is a kind of pouch or bag, with strong muscular walls, which, by their alternate contraction and relaxation, keep the masticated food in constant motion — churning

it from side to side, and thus breaking it still finer and finer, and mixing it more intimately. The grand agent, however, in converting the food into chyme, is a peculiar fluid known as the *gastric juice*, which is secreted from the inner walls, or lining membrane, of the stomach. This fluid has a remarkably solvent power, and will act upon ordinary articles of food with the greatest readiness. It is so powerful, even out of the body, that a portion put into a bottle, for instance, will dissolve or digest a piece of meat or other food suspended in it, almost the same as though it were in the stomach. The gastric juice differs in its nature according to the character of the food upon which the animal subsists. Thus, in herbivorous animals, that live altogether upon vegetables, as the sheep, or the ox, it can not dissolve flesh, while in exclusively carnivorous animals, it can not dissolve vegetables; but in man, as in other omnivorous animals, it acts equally upon both animal and vegetable food. A somewhat remarkable peculiarity of this fluid, however, is that it can not act upon any substance possessing life or vitality; hence, it does not injure the coats of the stomach and intestines, with which it comes in contact; and hence, also, we often find that worms live unhurt in the stomach and bowels. But as soon as they die, they are dissolved by it, or digested. It will also soon destroy the coats of the stomach after death. The natural appearance of the gastric juice is that of a limpid, colorless fluid, slightly viscid, and somewhat acid to the taste.

When the food has become properly digested, or converted into chyme, it passes from the stomach, through the *pyloric orifice*, into the *duodenum*, where it undergoes the process of what is termed *chylification*. A peculiarity in this pyloric orifice, or *pylorus*, is that it will not allow the food to pass it without first being properly dissolved by the gastric juice, or *chymified*. All undigested masses, pieces of beef, or whatever else it may be, will be refused exit until they are reduced to the proper consistence. Hence the name *pylorus*, which means *gate-keeper*.

Chylification.—This consists in the separation of the nutritious portion of the food from the innutritious or refuse. In the duodenum the food or chyme, as it now is, meets with two other fluids, the *bile* and the *pancreatic juice*. The bile is a dark green, bitter, and alkaline fluid, while the pancreatic juice somewhat resembles the saliva. These fluids are conveyed into the duodenum through small tubes or ducts coming from the organs which secrete them — the liver and the pancreas — as has been fully explained in the anatomy of these organs.

Immediately after the chyme becomes mixed with these fluids, it begins to separate into two distinct portions, one of which is the chyle, or nutritious portion, and the other the refuse portion, which

passes off by the bowels. The chyle is a white, milk-like fluid. It resembles blood, however, in nearly every particular except its color; and hence has been called *white blood.* Indeed, it is blood, and only waits the coloring process, to be ready for use in the processes of circulation and nutrition.

Absorption of the Chyle. — The refuse or innutritious portion of the food, as I have said, passes off by the bowels; but the chyle is absorbed or taken up by an immense number of little vessels or tubes, which open upon the inner surface of the duodenum and small intestines, called *lacteals*, and is by them carried and emptied into the *thoracic duct*, a long tube about the size of a goose-quill, or hardly so large, which runs up along the spine, behind the stomach and heart, and empties into the left *subclavian vein*, at a point under the left clavicle, near the neck. Through this the chyle passes, and is thus mixed with the *venous blood*, and goes with it direct to the heart, and thence to the lungs, where the action of the air, or the oxygen from the air, turns it red, and converts it into real blood. From the lungs it passes back again to the heart, through the pulmonary veins, and is distributed along with the general mass of blood to all parts of the body, through the arteries; thus nourishing and invigorating the system, and supplying the waste that is continually taking place, as well as furnishing additional material for increasing the size of the body during its growth. All the nourishment and strength we receive from our food is obtained in this manner; and all our bones, muscles, and every part of our bodies, are made in this way; the food we eat making the blood, and the blood in turn making the more solid parts. How wonderful! When we reflect that this piece of bread, or this potato, which we are about to eat, *to satisfy our hunger*, will, in a few hours, be converted into red blood, flowing through our veins and arteries, and that probably before we rise in the morning from our slumbers and our dreams, it will constitute a part of the living flesh of our body — the change will appear little less than a miracle.

Additional Observations on Digestion. — The absorption of the chyle takes place, principally from the duodenum, and first portion of the small intestines, called the *jejunum;* less from the second portion, the *ileum;* and still less, if indeed any, from the large intestines. The lacteals commence upon the inner surface of the intestines, and as has been said in describing these vessels, pass through certain small bodies, called the *mesenteric glands*, which are supposed to exert some influence upon the chyle as it passes through them. The lacteals all terminate in the lower end of the thoracic duct, where there is a sort of enlargement of that vessel, called the *receptacle of the chyle.*

The time required for digestion to take place — that is, to change food into chyme, ready to pass out of the stomach into the duodenum — varies according to the character of that food, and the tenderness of the fiber on which the gastric juice is required to act, as also upon the proper or improper mastication of it before entering the stomach. It has been found by experiment that rice, sago, tripe, raw eggs, soused pig's feet, broiled venison steak, and a few other articles, require but about an hour to an hour and a half; while some meats, as broiled beef steak, broiled fresh pork, and mutton, require about three hours, and veal, fried beef, salt fish, salt pork, most domestic fowls, as chickens and ducks, nearly or quite four hours. Turnips, potatoes, beets, carrots, wheat and corn bread, green corn, and apple dumplings require about three hours, and melted butter and old cheese near four hours. Boiled cabbage, four and a half hours, and roasted fresh pork five hours. Radishes, pickles, and raw onions, from six to twelve hours, and sometimes longer. Oily substances, as beef and mutton suet, the greasy portion of soups, and grease generally, are digested with great difficulty.

The medium time for the digestion of a meal, under ordinary circumstances, is about three hours and a half. If we drink freely at the time, especially of ice-water, it will require four hours, or longer.

Moderate exercise after a meal increases the temperature of the stomach, and assists the digestion. It is best, however, always to rest half an hour immediately after eating a hearty meal.

On Drinking at Meals, and Liquid Aliments. — Wine, spirits, water, tea, coffee, and other fluids, are not affected by the gastric juice, and consequently not digested. *All fluids must pass from the stomach — mostly by absorption — before digestion commences.* Hence, here is another important reason why fluids should not be taken along with our food, or at least should be taken sparingly. They only retard digestion. The habit of soup-eating at meal time is a bad one. It is better to avoid soups entirely, if we are well and intend to eat a full meal. All their watery portion must be absorbed and removed from the stomach before digestion can take place. Soups, also, such as we find at the hotels and eating-houses, usually contain stimulating condiments, which excite the mucous membrane of the stomach and produce an artificial and often greatly increased appetite, thereby causing us to eat too much. The stomach should never be excited by artificial stimulants, as pepper, mustard, and the like, for the purpose of increasing the appetite. Nature is the best stimulant, and the best judge as to when we should eat and when we should not.

It is no objection to the truth of this doctrine, to say that milk is healthy and nutritious, and that physicians recommend soups and

broths for the sick and the convalescing. In the first place, fully eighty per cent. of the best milk is water. This must be absorbed and removed from the stomach. The remainder, the nutritious portion, is then formed into a kind of *curd*, and is no more a liquid, but a semi-solid. The gastric juice can now act upon it, and change it into chyme. But as to the utility of milk at all as food, beyond mere infancy, there is good room to doubt.

As to the utility of broths and gruels for the invalid, this can only be justified upon the following principle: Usually in such cases, particularly in persons recovering from a spell of sickness, as Fever, or other acute diseases, there is a morbid, craving appetite, sometimes almost furious, and generally demanding things that are entirely improper, as pork, cabbage, cheese, pickles, mince-pie, and the like. In order to quiet the appetite as well as we may with safety to the patient, and at the same time furnish the raging stomach something to work upon, to busy itself with, and, as it were, "keep it out of mischief" for a few hours, we give it a lot of gruel, or weak soup, which, after all, affords it but little nutriment, or not enough to do any harm. The stomach, in such cases, needs something to fill it up, to distend it somewhat; but if we should do this with strong food, we should at once endanger the patient's health, if not his life. Upon this hypothesis only, can the usual practice of giving soups to the sick be justified. But, in many cases, perhaps in most, a small quantity of solid food—a crust of bread or some boiled rice—would be much better.

Another reason why drinks should not be taken at meals is, that, as a general thing, they contain no nutriment, and hence do not help to satisfy the appetite, although they do help to fill and distend the stomach. We usually eat as much food, when we drink a pint of water or coffee along with it, as we would were we not to drink any thing; and if wine, or ale, or stimulating drinks are used, we will be apt to eat more, for they excite the appetite. The consequence is, that, with our *eating* and *drinking*, the stomach will be so much *distended* as to be uncomfortable, and if the habit be persisted in, it will certainly lead to permanent disease of that organ. More Dyspepsias and ruined stomachs are produced in this way than people are aware of.

Avoid fluids as much as possible *when you eat.* Remember, that like the saliva when fluid is in the mouth, the gastric juice will not flow when the stomach is filled with liquids; or if it does, it will be so diluted by them that it cannot act upon the food. I have known some of the most inveterate cases of Dyspepsia cured entirely by abstaining from the use of drinks of all kinds at meals. But particularly at dinners should we dispense with drinking, for it is then that

we usually eat the most heartily. If drinking can not be entirely dispensed with at breakfast and supper, by all means leave it off at dinner—the principal meal—and for at least three hours after, *if you are at all dyspeptic.* Cold water, especially ice-water, is bad at meal-time. It chills the stomach, and retards or puts back absorption, as well as digestion, at least half an hour; and absorption of the fluids, you know, must take place before digestion commences. I can hardly say that ice-water is healthy at any time. It should be used with caution — particularly by all who are not in the habit of using it daily.

On the Quantity of Food.—No very definite or satisfactory rule can be prescribed, as to the exact quantity of food necessary for the system. It is generally admitted by intelligent men that we eat too much — nearly twice as much as Nature, for all practical purposes, requires. Philosophers, physiologists, chemists, pathologists, and dieteticians all agree in this. Not, of course, that every individual eats too much; but that the people of this country, as a people, are given to excessive and unnecessary eating.

The proper quantity of food must necessarily vary according to the age, occupation, habits, and health of a person, and also the climate or temperature in which he lives. Children and young persons require an extra amount of food to furnish material for the growth of the body. The more rapid the growth of the child the greater the demand for food.

Persons of active habits, and such as labor hard, or exercise a great deal, need more food than those of inactive or sedentary habits. Increased action of the body increases in a proportionate degree the wearing out of the organism, and facilitates the removal of the waste material through the different outlets, especially through the lungs and the skin. This increase in the waste of the body requires, of course, an additional amount of food out of which new material is to be made to supply the loss. This law holds good, however, only where labor or bodily exertion is not carried so far as to produce muscular and nervous exhaustion, and consequent debility; for in such case the stomach and whole digestive apparatus would suffer also, and would require that less food be taken, for the time being, or greater debility and perhaps serious disease would be the result.

A sudden change from active, laborious habits, to such as are inactive and confining, requires that the usual amount of food should be diminished. Let an active, laboring man take a trip on one of our fine steamboats requiring several days, and ten chances to one he will soon feel the effects of disregarding this important law of our nature, in the form of Dyspepsia, Sour Stomach, Headache, and a general derangement of the system. He will be sensibly impressed with

the fact that he has either eaten too much, or has not had exercise enough.

In warm weather, or in warm climates, we require much less food, and of a less stimulating nature, than in cold. I have frequently noticed that when in New Orleans I ate much less than when in the upper country, and that I could do as well there on two meals a day, as on three in the latitude of Cincinnati or Chicago. A certain amount of food is needed for fuel; in other words, a certain amount of carbon, which is obtained from our food, is needed for a sort of combustion by its union with oxygen, for the purpose of producing bodily heat, and of maintaining a proper temperature of the system. In warm weather, and even when the body is warmly clothed, a less amount of food for this purpose will be needed. In the arctic regions, the inhabitants live almost exclusively on animal food; while under the tropics some nations subsist entirely on vegetable diet, and do not seem to wish or require any thing more stimulating.

The quantity of food must also be regulated according to the health of the individual, and consequent condition of the digestive organs No more should be taken than can be well digested; for unless the food is properly digested and changed, as has been described, it does not invigorate the system, but actually does harm. Large quantities of food at any time oppress the stomach, and produce languor of both body and mind, and of course can but be still more detrimental when the system is not in perfect health.

Some writers lay it down as a rule to be observed in regard to quantity, other things being equal, that we should eat no more than is barely sufficient to satisfy the appetite. This, however, is not a safe rule. We are not always able to distinguish readily between *appetite* and mere *taste*, and hence are liable to eat too much. It is far better to say, never eat till the appetite is satisfied — always quit hungry. Most persons seem to eat just about as much as they can, so as not to suffer from it immediately. The inquiry seems to be — with those who inquire at all — not how little they may eat, but rather how much, without the loss of health as the consequence. It is a better rule, I have said, to leave off hungry, or, as some say, never eat quite enough. "Grant Thorburn, whose writings over the signature of Laurie Todd have interested and delighted many, and who, at the age of ninety, or nearly so, was almost as young in his feelings as ever he was, was accustomed to say to his friends that he never ate enough in his whole life." But even this rule — to leave off hungry — will not apply in all cases, for some people never are hungry! There was once a sort of half-idiot, who always went about asking the people if they didn't wish to know the art of never being dry, or thirsty? The secret was, he said, "always mind to drink

before you are dry, and you will never be dry." A great many people apply this rule to their eating. They always eat before they are hungry, and hence never are hungry. The present fashionable styles of cookery are well calculated to make us mistake taste for appetite, and eat more than we ought, and more than we would of good, plain, wholesome food.

Eating Between Meals. — One of the most common sins against the Laws of Health is eating between our regular meals. At present it is customary in many places and with persons, of all classes, to eat so often that they seldom, if ever, have a good appetite; and what appetite they may have at first, is soon spoiled by their over-indulgence in eating. Not content with three meals a day, they must take a lunch in the forenoon, and another in the afternoon, so that the stomach has no rest during the whole day, and by the time supper arrives, it is so much fatigued and jaded that this meal — which is frequently a heavy one — will hardly be disposed of during the whole night. The reward so richly earned is sure to follow. Our sleep is disturbed and unrefreshing; the night is passed in restless anxiety or distressing dreams, and we wake next morning with a bad taste in the mouth, dryness of the throat, dull headache, loss of appetite, and an unwillingness to rise. Such a course of living, if persisted in, will unquestionably bring about a bad state of things, resulting in confirmed Dyspepsia, and a general loss of health. The stomach requires a proper degree of rest. It has a muscular coat, which, like all muscular bodies, needs rest after exercise, and must have it — or we will pay the penalty. Of all the organs of the body, there is probably none so much abused as the stomach.

Whether we eat once, twice, or three times a day — and we should never eat more than three times — we should eat only at our regular meals. Nothing containing nutriment, whether solid or liquid, whether fruits, nuts, or cakes, should be allowed to go down our throats between meals. Apples, oranges, nuts, and the like, of course, are intended for us to eat, but it should all be done at our tables, and regular meals. Not, however, as the general custom is, at the end, when we have already eaten as much as we ought, but along with our bread and other food, as a part of the meal. And so, also, should pies, puddings, and cakes, if eaten at all. But it is better to avoid all pastries entirely.

It is a mistaken idea among farmers that they can not get along through harvest, during the long hot days, without eating something between meals — especially in the afternoon. They will find on trial that they will be able to endure the heat and fatigue of the harvest season much better without their "four o'clock piece." It only does harm, by over-tasking the stomach and rendering it unprepared for

the evening meal. If you value good health and long life, avoid all eating between your regular meals — every "appearance of evil" of this kind — whether it be lunches, oyster suppers, apples, oranges, candies, or what not, either in large or in small quantities; for even the smallest portion — a crust of bread or a mouthful of apple — will call into exercise the whole digestive system.

Regularity in Eating.—Another very important rule in regard to eating, is regularity. We should make it a point to take our meals at regular hours; and rather than vary from this it is better to miss a meal occasionally. It may be stated as a general law — with here and there an exception, perhaps, as there are exceptions to all general laws — that those persons who are most regular in their hours of eating, other things being equal, are the most healthy, and in old age are the most cheerful, sprightly, and youthful in their feelings.

We are, to a great extent, creatures of habit, and may accustom ourselves to almost any hours for eating, and hence may as well be regular as irregular. The habit of irregular eating often grows up with us from childhood. Unfortunately for human health and happiness, the young are too often trained up, in regard to this matter, in a way they should not go, and when they become old they dislike to part from it. Too often in childhood is the foundation laid for ruined health and a miserable existence, by the fond but unwise indulgence of parents. And many a child, too, has been carried away by summer and autumnal diseases, that might have escaped, had it been less indulged, or been properly trained in its habits of eating. Many a child has been *fed to death* by its mother. Locke, the philosopher, has said, that "when a child asks for food at any other time than at his regular meals, plain bread should be given him — no pastry, no delicacies, but simply plain bread. For if the child is really hungry, plain bread will readily go down; if not hungry, let him go without till he is so." This is good advice. But it is still better to give him nothing at all between his meal times. These, of course, should be more frequent than for larger persons; but they should be at regular stated periods. I know it is hard to train up a child in the way he should go, and harder still to train ourselves to proper dietetic habits, but the importance of doing so, whether we eat two, three, or more times a day, is at least equal to the difficulties we may encounter, and is certainly worthy of our best and most considerate efforts.

Eating Too Fast.—Another very common violation of the Laws of Health, is in eating too fast. This is almost as bad as eating too much, for it amounts to nearly the same thing. Persons sometimes boast that they can eat a regular meal in five or six minutes. Such

persons swallow their food without chewing. This is not really eating, in the proper sense of the term. Every one knows, that if we eat fast, we can not properly masticate our food; and if there be one law of our nature which is more rigid in its demands than any other, and the violation of which is sure to be followed, sooner or later, by severe punishment, it is that which requires that our food be well masticated before it is swallowed.

As I have said in describing the process of digestion, the food, after it enters the stomach, has to be changed into a soft, pulpy mass, called chyme, which is done by the solvent properties of the gastric juice, and the incessant muscular action of the stomach. This change must be complete; there must be no lumps, or large chunks, or even small ones — but all must be reduced to a perfect semi-fluid mass, before it can pass into the duodenum for chylification. Do you not see how much labor you can save your stomach by chewing your food well, or how much you may cause it by neglecting to do so? The stomach, as I have several times said, needs rest after its labor; but if it must be tugging away upon a large chunk of beef-steak, or several of them, and a cold potato, and perhaps a large slice of pickle, from the moment you have swallowed your dinner until supper time, do you not see that it will get no time to rest? And tug away it certainly will, until the last chunk you have swallowed is reduced to chyme, or it has given out in utter exhaustion, or has made itself sick by bringing on inflammation. It must be plain, therefore, that the habit of swallowing our food half masticated, or less than half, as is done by those who eat fast, is a very bad one.

Another serious objection to fast eating is, that it does not become properly mixed or moistened with the saliva — indeed, scarcely at all. The saliva does not commence to flow, or even to secrete, until we commence chewing the food, and it continues to flow only while we continue to chew. But if the food is gulped down without chewing, there will be little or no saliva go down with it; yet the saliva, to some extent certainly, is essential to proper and healthy digestion. It will not answer so well to moisten and wash down the food with water, or other drinks. That will only make the matter worse, for it will retard digestion by preventing the flow of the gastric juice, or by diluting it if it does flow. There is no way so good as Nature's own way. Our teeth have been given us to grind our food, and the salivary glands to moisten it, and we should make use of them. Instead of five or six minutes, we should never occupy less than thirty, in eating a full meal, where we can at all command the time; and it is better, especially at dinner, to go over, rather than under thirty minutes. But whether you eat slow or fast, a long or a short time, little or much, always bear this one important thing in mind —

masticate your food well before you send it into your stomach. By so doing you will derive more benefit from it, will not be so likely to eat too much, and will enjoy vastly better health.

RESPIRATION.

In describing the anatomy of the lungs and the circulation of the blood enough, perhaps, has been said to give you a tolerably correct idea of the process of respiration, and of the important relation it bears to nutrition, on account of its influence upon the blood. Some special remarks upon the subject, however, may not be amiss, as it is one of the essential processes of the living economy, without which we could not live, any more than we could live without the blood itself. Every body knows that we can not live without breathing—that if from any cause whatever our breath is cut short, we die immediately. But I apprehend it is not very generally known why this is so, or what is the exact relation the air which we inhale into our lungs sustains to our animal life. This will now be explained.

Necessity of Respiration.—Respiration, or breathing, is for two important purposes: First, and mainly, for the purpose of purifying the blood; and second, for the purpose of producing animal heat. The organs engaged in respiration are the lungs, the bronchial tubes, and the air-cells of the lungs; and when the change of the blood is included, the pulmonary arteries, veins, and capillaries of the lungs are to be added. Besides these, if we include the mechanical act of breathing, the diaphragm and certain muscles of the chest are also to be taken into the account.

The purification of the blood is indispensable, so indispensable indeed, that it would soon cause death if it were to remain unchanged. The venous blood is full of poison, which it has acquired in its circulation through the body; and this poison can only be removed by bringing it into contact with the atmospheric air, which is done in the lungs by the process of breathing. This poison is carbonic acid, and results from the union of carbon with oxygen, two agents which have a remarkable affinity for each other when found in the body. Carbon, as I have before remarked, is obtained from our food; it is of the same nature as charcoal, and in itself is quite as harmless as charcoal; but when it unites with oxygen, or, as is really the case, when it is burned up by that vital gas, the result or residuum—what we may call the *ashes*—is carbonic acid, a suffocating, deadly poison. This carbonic acid is the same thing that is sometimes found at the bottom of wells, and in mines, in the form of a gas, usually called "choke-damp," and which will kill a person or animal immediately, if breathed or inhaled into the lungs. It is also the

same as that given off by burning charcoal, which has often caused the death of persons, by suffocation, who have left it to escape into their bed-rooms.

The blood is sent to the lungs for the purpose of getting rid of this poison. It there escapes through the air-cells, and is expired, or thrown off with the breath. This is the reason why people are suffocated, or their health greatly injured, by breathing the same air over again too many times. It becomes more and more charged with this poisonous gas every time it is breathed, and if continued long enough, will produce death as effectually and certainly as the choke-damp of wells. In badly ventilated rooms, and in buildings containing large public assemblies, people are often poisoned in this way, and if not killed outright, have headaches, nervous depression, and faintings, which often lay the foundation of more serious diseases.

Mechanical Act of Breathing. — As has been said, the diaphragm is the principal organ in producing the act of breathing. For a particular description of this muscle, see its anatomy. By its contraction it presses down the abdominal viscera immediately beneath it, and thereby enlarges the capacity of the chest in that direction, allowing the lungs to expand, by following it. At the same time, the muscles of the ribs contract and draw them upward and outward. The chest being thus enlarged — downward by the diaphragm, and laterally by the muscles of the ribs, giving the lungs room to stretch out and expand, which they do — a *vacuum* is formed, and the air rushes in through the trachea, or windpipe, and the bronchial tubes, and fills up the air-cells; and just on the very same principle, too, that air will rush in and fill up any vacuum. This is called *inspiration*. It is estimated that the whole extent of these air-tubes and cells, in the lungs of a grown person, is equal to twenty thousand square inches, or more than twenty times the surface of the whole body; and that the quantity of air received into, and expired from them, in twenty-four hours — allowing that we breathe twenty times a minute, and fill the lungs each time — must be near four thousand gallons. But we do not always inhale a full breath — seldom as full as we ought. Many persons injure their health by getting into a habit of inhaling too little air; and some ladies ruin theirs by lacing their chests so that they can not, if they would, inhale more than half as much as they should. It would be much wiser, because much less injurious, if they would compress their feet, like the Chinese ladies, instead of their lungs.

When we inhale the air and inflate the lungs, we are said to *draw in* the breath; but the *drawing*, you perceive, is done by the diaphragm and intercostal muscles, which enlarge the chest, and the air

forces itself in and fills up the lungs. When the air has remained in the lungs a sufficient time to purify the blood, the muscles relax, the ribs fall in or press upon the sides of the lungs, the diaphragm rises, being forced upward again by the stomach and liver and some of the abdominal muscles, and thus the lungs are *compressed*, and the air ejected or forced out. The expulsion of the air from the lungs, or sending the breath *out*, is called *expiration*. And the whole process — inspiration and expiration, or drawing in and sending out the air — is called *respiration*, or breathing.

Changes of the Blood and Air. — The manner in which the blood is purified will be better understood by observing the changes which it and the air undergo, when they come in contact with each other. About one-fifth part of the atmospheric air is *oxygen* — the balance *nitrogen*. On examining the air, however — the breath — as it comes from the lungs, it will be found that the greater part of the oxygen has disappeared, and that another gas — carbonic acid — has taken its place. This new gas, as has been said, is formed by the union of the oxygen from the air with the carbon in the blood. The venous blood, which is heavily charged with carbon, and which gives it its dark color, is conveyed to the lungs through the pulmonary arteries, and passes from them into the capillaries, which surround the air-cells, forming, as has been said, a fine *net-work*. It is here that the blood is brought in contact with the air — or so near it that it amounts, in effect, to the same thing. The air is in the cells, the blood on the outside of them in the minute capillaries, the walls of which are so thin and porous that the oxygen escapes from the air, unites with the blood, burns up its carbon, sets free the carbonic acid, which results from the combustion, and which escapes through the cells, takes the place of the oxygen in the air, and is ejected with it from the lungs. Thus the blood becomes changed — oxygenized, as it is sometimes termed — and at the same time the air or breath becomes changed also. The one is made pure, the other impure. And this process goes on constantly; every time we inspire, or take in a fresh supply of air, a fresh supply of venous blood is forced into the capillaries, around the air-cells; the previous lot, being purified, is sent off into the veins of the lungs, and conveyed by them to the heart, for general distribution.

One important effect of this change upon the blood is, that it is turned from a dark purple to a bright red color. This is caused partly by the destruction of the carbon and carbonic acid in the blood, as has been described, and partly by the union of oxygen with the iron in the blood. Of the fact that there is a certain portion of iron in the blood, there can be no doubt. It has been abundantly proved by chemical analysis. The red globules of the blood are largely com-

posed of this mineral, and by the union of the oxygen with them, they become, to a certain extent at least, a *red oxyd of iron.*

Importance of Free Ventilation. — It is estimated that an ordinary sized person requires about 40,000 cubic inches of oxygen gas every twenty-four hours, to be used up in breathing, in the manner just stated. About four-fifths of this, or perhaps a little more, is consumed in burning up the carbon in the blood, and is turned into carbonic acid; the balance is used in giving to the blood its color and proper stimulus. From this simple fact, and bearing in mind also that only about one-fifth part of the air is oxygen, any person can form a tolerably correct idea as to the amount of fresh air needed in a given time in public halls and places containing a large number of people. And with the other simple fact before them, that about one-fifth of the air or breath that escapes from our lungs — if it was pure when it entered — is carbonic acid gas, and contains little or no oxygen, they can form some idea of the importance and necessity of free ventilation. It is seldom, however, that this matter is properly attended to; indeed, we have good reason to believe that its importance is very little understood. We often see several hundred persons crammed together into a room where not more air can enter than is necessary for one-fourth the number; and the consequence is, they all soon feel uneasy and oppressed, and many of them no doubt suffer afterward still worse; and yet the probability is that few of them ever think of the cause. But above all things, is it important that our sleeping-rooms should be well ventilated. Too much attention can hardly be paid to this matter; yet I am sorry to say very little is given to it, as a general thing. Benjamin Franklin somewhere says, that it is recorded of Methuselah — though he does not tell us *where* it is recorded — that when he was five hundred years old the angel of the Lord appeared unto him, and told him to arise and build himself a house, for he was to live yet five hundred years longer. "If I am to live but five hundred years," said Methuselah, "it is not worth while to build me a house; I will sleep in the open air, as I have been used to do." The moral of this is, that sleeping in the open air, or where he always had a full supply of pure fresh air, was the cause of his living so long. The hint is a good one, and we should profit by it in the arrangement of our sleeping-rooms.

ANIMAL HEAT.

We are next to explain, if we can, the source of animal heat, and the manner in which it is generated. I say, if we can, for physiologists do not all agree in regard to this matter. That there is such a thing as animal heat, and that the human system has within itself

the power and capacity of generating this heat, and of regulating it according to circumstances and conditions, we know; but the precise manner in which this is done, does not seem to be so well understood yet as some other processes of animal life. Inanimate substances are influenced in their degrees of heat and cold by the temperature which surrounds them, and by other bodies with which they are in contact. Not so, however, with man. He has a temperature of his own, independent of the surrounding medium in which he lives, and is capable of maintaining this temperature at very nearly the same degree in all seasons and climates, whether the surrounding atmosphere be warm or cold. The standard heat of the human body is about 100 degrees, Fahrenheit. It seldom varies from this, in a state of health; or if it does, it is but little. Perhaps 98 to 102 degrees may be regarded as the limits of variation.

I have said that physiologists do not all agree as to the production of animal heat. This is true, however, only to a certain extent. All the best authors on the subject agree in this—that the lungs are the principal laboratory of the system for the production of heat, and that it results from the chemical action of the atmosphere upon the blood; or, to speak more correctly, from the union of the oxygen of the atmosphere with the carbon in the blood. Some, however, maintain, in addition to this, that there is a constant union of oxygen and carbon, and consequent evolution of heat, going on in the minute capillary vessels throughout the system, and which accounts in part for the change in the color of the blood, from a light red to a purple, or from arterial to venous. This is probably true. One thing is certain: a union of oxygen and carbon can not take place anywhere, whether in the system, or in the open air, without producing *combustion*, and consequently *heat*. What we call *fire*, or the burnnig of coal, wood, or any other combustible substance, is nothing more nor less than the rapid union of the oxygen in the atmosphere with the carbon in the substance burned. The union which takes place in the human system between the oxygen and carbon, is not so rapid—not so great, as when it takes place in the open air, in the phenomenon of fire; but so far as it goes, it is precisely the same thing; and produces the same result—that of heat.

Probably sufficient has been said in explaining the process of respiration, and the change of the blood in the lungs, to give you an idea of the manner in which heat is generated in the body. I have there told you that the oxygen escapes from the air we breathe, while it is in the air-cells, and unites with the carbon in the blood as it passes through the capillaries which surround these cells; and that the union of these two agents produces a sort of combustion, which purifies the blood, or rids it of its excess of carbon. In other words, the

oxygen burns up the carbon. Now, Nature is a great economizer; hence, this very process by which the blood is purified, is turned to a double account. The only way to get rid of the carbon in the blood, which must be done somehow or other, is to burn it up. To do this, it must be brought into contact with oxygen, for without this wonderful gas, combustion can not take place anywhere; and this, it seems, can only be done, to any great extent, in the lungs, and in the manner already described. But, as has also been said, a union of oxygen and carbon, or combustion, can not take place, either in or out of the body, without producing *heat*. But the living organism requires heat. It must be kept near a certain degree of temperature, or the blood will thicken and stagnate, and the whole machinery of the system soon cease to operate. As the blood flows through every part of the system — is constantly going to and returning from every part, in a ceaseless round of circulation, there can be no better way— none so good, indeed — to warm the general system and all its parts, and maintain the required degree of temperature, than to warm the blood. What a happy thought! What a wise arrangement! Warm the blood, and let the blood warm the body! And the very process which purifies the blood, warms it; the very combustion which removes or destroys its carbon — which must be done, and yet can be done in no other way — also, as a natural consequence, heats the blood, and brings it up to the proper degree of temperature. And by the rapid and constant circulation of the blood, this temperature is extended and maintained throughout the system. What wisdom, both in arrangement and in economy, is here exhibited!

As an evidence that heat is generated in the lungs, and in the manner stated, we have but to observe the fact that the body becomes warmed, or its heat increased, by any exercise or other means that causes us to breathe quicker. As a more perfect test, let any person, instead of taking any manual exercise, sit or lie down in a cold room, and breathe faster and fuller for half an hour, and the result will be that he will grow quite warm, perhaps uncomfortably so. Many of us do this of cold winter nights, without, probably, ever thinking of the philosophy of the thing, for the purpose of getting warm in a cold bed. Cold atmosphere is more dense, and consequently contains more oxygen to the cubic inch, than warm atmosphere; and hence, the cold atmosphere with which we may be surrounded, and which we breathe, actually aids, by its coldness, in producing the increased amount of bodily heat required in cold weather. A person who sits still by a large fire on a cold day, will often be quite chilly, while another, who moves briskly about out of doors, will feel quite warm. The one vainly tries to imbibe warmth *externally*, while the other,

by his exercise and consequent increased breathing, produces it *internally.*

Although the principal amount of animal heat is undoubtedly pro duced in the lungs, yet it probably is not all produced there. A por tion of the oxygen which passes through the air-cells into the blood — perhaps one-fifth — instead of being consumed with the carbon, unites, as has been already stated, with the iron, or red globules of the blood, which gives that fluid its bright red color. This passes into the general circulation, and while the blood is passing through the capil-lary vessels, especially in the skin and near the surface of the body, it is thought that a union of oxygen and carbon again takes place, in which more or less heat is evolved. We know that the blood loses its bright red appearance, and that this transformation takes place in the capillaries, where it changes from arterial to venous blood. Hence, it must part with its oxygen, and the most reasonable conclu-sion seems to be, that it is used in consuming the carbon that it here meets with.

Some have supposed that animal heat is owing, in some respect, to nervous influence. If by nervous influence we mean the electricity of the system, this may, to a certain extent, be true. It may be that electricity has something to do with the production of heat; perhaps it serves as the spark to light the fire, for we know that oxygen and carbon will not of themselves ignite; that they will not commence to burn — in other words, to unite in the form of combustion, without first being started or touched off by the application of a spark from some source or other. Electricity will do this. And it may be that a constant flow of electricity, a constant application of sparks, is necessary to continue the combustion. Fire will not burn in water, or in a fluid; yet, this burning of carbon is in the blood, which is an aqueous fluid. May it not be that the presence of animal elec tricity keeps up this singular fire, this combustion of carbon and oxygen, in the blood? Allowing the nervous system to be the source of the electricity, and the nerves its conductors, in this way, and this only, I think, may it be said that animal heat is dependent upon nervous influence.

ABSORPTION.

In describing the process of digestion, I had occasion to speak of the absorption of the chyle from the duodenum and small intestines; also of the fact, that all fluids taken into the stomach were absorbed before digestion took place. These processes are carried on by certain vessels for that purpose, called the lacteals and lymphatics, and have already been described. There is still another process of absorption,

however, carried on very generally throughout the system, in regard to which it is proper to say something.

By absorption is meant the removal, the sucking-in or taking up, of any substance which comes in contact with the body, or any portion of it, either upon the surface in the lungs, or in the stomach and intestines, which is done by what are called the *absorbents*, a set of minute vessels everywhere distributed through the system, and which act like a set of hungry, ravenous little animals. They will absorb every thing that comes in their way, if they can, whether it be injurious or beneficial, poisonous or healthy ; and as they empty their contents directly into the veins, the blood, of course, becomes poisoned in this way, and disease and not unfrequently death, is the consequence. It is on this principle of absorption that medicines are often applied to the surface of the body when they can not be taken internally. In such cases, the cuticle, or scarf-skin, is first removed by a blister, as, without this, absorption will not take place readily. Yet we know that it will take place to some extent, even without the removal of the cuticle. This is proved by the fact that thirst may be diminished by bathing the body in water ; and even hunger to some extent satisfied, by the application of nutritious liquids to the surface. Sailors are aware of this fact, and sometimes, in cases of extreme thirst and destitution of fresh water, let themselves down into the sea water, by which means the blood becomes sufficiently diluted by the water that is imbibed or absorbed through the skin, to greatly relieve the burning thirst, for the time being. But, as a general thing, absorption will not take place to any perceptible extent through the cuticle or outside skin, and probably only, as in cases of bathing, where the body is allowed to remain in the water long enough to soften the cuticle to an extent sufficient to admit of a permeation which otherwise could not occur.

In cases of cuts and abrasions of the skin, persons should be very careful about coming in contact with poisonous substances. Serious, and often fatal, cases of poisoning have occurred in this way. Medical students are sometimes poisoned in this way by cutting themselves while dissecting dead bodies ; and occasionally the same fatal results occur to persons in removing the skin from dead animals. Putrified flesh is poison, and if this poison, though ever so small a quantity, is brought in contact with any portion of the body where the cuticle has been removed, or with a cut or sore, it is immediately taken up by the absorbents and carried into the blood, and the person is poisoned. Such poisons are generally fatal. It is on this principle that the poison of snakes and other venomous reptiles act. Vegetable and mineral poisons will act in the same way. Persons can not be too careful in regard to this matter.

But probably the greatest medium through which foreign substances and agents are absorbed into the system, is the lungs. Various poisons, vapors, and other hurtful substances and gases which float in the atmosphere, are taken into the lungs in breathing, and, by means of absorption, are carried into the blood, and the general system. Absorption by the lungs is very rapid and powerful. It is a well-known fact, having been repeatedly proved by experiments, that if a person breathe the vapor of Turpentine for a few minutes, it may be detected in the blood and other fluids of the system in a very short time afterward. The vapor of Prussic Acid, if inhaled into the lungs, will produce death almost instantly. It is also in this way that contagious and infectious diseases, as the Small-pox, are communicated. This will account for the origin of many diseases, the causes of which are not readily understood, and will also show us why and how it is that so much sickness is found in crowded tenements, and in cities and streets where there is but little pure air in circulation, and where filth and dirt and decayed matter are allowed to accumulate. It will also account for the Fevers and Agues of new countries, and certain marshy districts. The malaria, or marsh miasma arising from swamps in hot weather, and from decaying vegetable matter, floats in the atmosphere, and is taken into the lungs along with the breath, and is absorbed into the blood and diffused throughout the system, until it finally accumulates to an extent sufficient to produce Fever and Ague, or some other disease. These miasmatic poisons and deleterious gases may remain in the system for weeks and even months before they exhibit their effects openly; and hence, many diseases, no doubt, are attributed to other causes, or to some unknown cause, which are due to them alone.

If we would enjoy good health, therefore, we must learn to avoid the enemies of health. We must seek pure air, and, in hot seasons at least, avoid swampy and malarious localities, and filthy streets and cities. But if we disregard the most palpable Laws of Health, and become sick, we should not lay the blame to an inscrutable Providence, or a hard and cruel fate, but to our own ignorance and temerity, and the transgression of the laws which we ought to understand and obey. If the poisons which float in the air we breathe could not penetrate the air-cells of the lungs and enter the blood, then neither could the oxygen of the air, and hence the blood could not be purged of its carbon, and animal heat could not be generated, and we should soon die from impure blood or from the effects of cold. So, too, if the cutaneous and other absorbents could not take up poisonous substances that come in contact with them, and carry them into the blood, then neither could they remove, in like manner, the waste and morbid matter of the system, and our bodies would soon

putrefy and decompose, in the most horrid manner. All these functions and laws of our being are for the best and wisest purposes — are, in fact, essential to our existence; and it is our business and our duty to make ourselves acquainted with them. All the laws of Nature, whether physical or organic, are inflexible in their operation, and their infringement or disregard is sure to be followed by appropriate punishment. They make no allowance for motive or ignorance, but act upon all alike, whether they be wise or ignorant.

PERSPIRATION.

The Skin. — The skin is the seat of the important function of perspiration. It forms the external covering of the body, and, to the naked eye, appears to consist of a single membrane. Examination, however, has shown that it is composed of no less than three layers or membranes.

The first or outside layer is called the *cuticle*, or *epidermis*, and sometimes also the "scarf-skin." It is the part that is raised in a blister, and, except on the palms of the hands and soles of the feet, is very thin and transparent. It has no bloodvessels or nerves, and is therefore destitute of feeling, or sensibility. It is perforated with innumerable pores, or minute holes, through which the perspiration passes, and also the hairs. It is constantly wearing out and being renewed. On the palms of the hands and soles of the feet it is very thick, particularly in persons that labor, and being everywhere without sensibility, it serves as a protection to the true skin, and a barrier against the ready absorption of substances that come in contact with the surface.

The internal layer is called the *cutis vera*, or *true skin*, and is plentifully supplied with nerves and bloodvessels. So numerous are they, indeed, that you can not insert the point of a needle without producing pain and causing the blood to flow. When examined under a microscope, this layer is found to consist partly of dense fibers which intersect each other in various directions, and partly of minute bloodvessels, capillaries and nerves, which fill up the spaces between the fibers, the whole forming a most complete and compact net-work. Within the true skin are also an immense number of little glands with minute ducts, which penetrate the other layers and open upon the surface, constituting the pores of the skin. These glands are of two kinds, the *sudorific glands*, which secrete the perspiration, or the aqueous portion of it, and the *sebaceous glands*, which secrete an oily fluid, which serves to lubricate the external skin and defend it from the action of moisture, and also prevents it from becoming dry and

harsh. It is owing to the presence of this oily substance that water or perspiration collects in drops upon the skin.

Between these two layers of the skin, or between the cuticle and cutis, is a thin layer called the *rete mucosum*, the office of which seems to be simply to contain the coloring-matter of the different races. In the negro, it is black; in the mulatto, yellow; in the Indian, a dirty red; and in the European more or less white, as the appearance of the skin may indicate. Were it not for the rete mucosum, the African would appear as white as we do. It gives to the skin the various colors and shades of color, which are to be noticed in the people of different nations and climates.

The Source of Perspiration.—The perspiration, or what we call sweat, is secreted from the blood by the little glands which I have just mentioned. While the blood is passing through the capillaries of the skin, these glands secrete from it, or absorb its excess of watery fluid, and along with it a large amount of useless and extraneous matter.

Perspiration is distinguished into two kinds—*sensible* and *insensible;* a distinction, however, without any difference, except in quantity. It is said to be insensible, when it passes off from the body in the form of an invisible vapor; and sensible, when it collects on the surface in drops, in the form of sweat. In the one case it is so gradual, and is so rapidly evaporated, that it does not accumulate upon the skin so as to be perceived, and hence is said to be insensible; while in the other, either from exercise, the heat of the surrounding temperature, or the action of some agent taken into the system, the perspirable matter is thrown upon the surface faster than it can be evaporated, so that it becomes more or less perceptible, and is therefore said to be sensible. The process is all the same, however, in both cases, the difference being only in degree.

The Uses of Perspiration.—Most prominent among the uses of perspiration may be regarded that of removing from the system worn-out and useless matter and poisonous gases. It has been shown that through the medium of respiration the blood is oxygenized and purged of its excess of carbon and carbonic acid; but it is probably relieved of a still greater amount of impurities and injurious substances through that of perspiration. It has been ascertained that the average number of pores in the skin to the square inch is about 2,800, and the number of square inches of surface in a man of ordinary size is 2,500, which would give the whole number of pores of the skin as 7,000,000. We need not be surprised, therefore, at the fact stated by Sanctorius and other eminent writers on the subject, that from one-half to five-eighths of all that we eat and drink passes off through these pores in the form of perspiration. All physiologists agree that

from twenty to forty ounces of matter—thirty ounces being the average—pass off through the skin of a healthy adult every twenty-four hours. A large proportion of this perspirable matter is made up of the decayed and waste particles of the body, which have been thrown into the circulation by the absorbents, and thence extracted by the sudorific glands. As has been stated elsewhere, the constant wearing out of the material of the various tissues of the body, furnishes a large amount of waste matter, all, or nearly all, of which is eliminated from the blood and the system in this way.

Besides the waste material of the body, there are often other irritating and poisonous substances which can only be removed from the system through the medium of perspiration. I have already explained in the proper place the course which every thing that enters the stomach takes in its passage through the system. Fluids are absorbed, and pass directly into the blood. Solids undergo digestion, and then pass into the duodenum and intestines, whence all that can be reduced to a semi-fluid state, in the form of chyle, is conveyed into the blood through the lacteals and thoracic duct. When poisonous substances are taken into the stomach, therefore, if not ejected by vomiting, induced either by the poison itself or by something taken for the purpose, or removed by artificial means, they will enter the blood, and with it the general system, in the same way; that is, through the absorbents or the chyle ducts. Solid and liquid poisons usually enter the system in this way, through the mouth and stomach, while poisonous vapors, miasmata, and gaseous substances enter through the lungs and pass directly into the blood by absorption, as has been previously explained. It is reasonable to suppose that more or less poison is taken into the system through one or both of these mediums every day. There is, probably, not a day or a night but we inhale more or less impurities in the air we breathe. In cities, towns, and in many districts of country, especially in warm weather, there are always more or less animal and vegetable effluvia, and poisonous gases afloat in the atmosphere. And it can not be doubted that we often take into our stomachs irritating and poisonous substances along with our food, to say nothing of our medicines. All such injurious agents, after they have once entered the circulation, can only be removed from the system through the grand emunctories of the blood, the perspiratory organs. By this most admirable provision of Nature, the fluids are cleansed, and extraneous matter is eliminated from the body, but for which, debility, disease, and a general derangement of the living machinery would speedily ensue.

Another use of the perspiratory process is to regulate and modify the temperature of the body. As has been shown, animal heat is generated in the system by a sort of combustion resulting from the

union of oxygen and carbon. As this combustion, in the coldest of weather, is sufficient to maintain the heat of the system at about 100 degrees, it is evident that if there were not some wise provision for its escape in case of excess, we should be too warm in summer, indeed, we should be too warm at all times, and would soon be consumed with burning fever. A large amount of heat escapes from the body by evaporation, passing out through the pores of the skin along with the perspiration; indeed, this is its natural outlet, and its escape is the more rapid in proportion to its excess, if the perspiratory organs be in a healthy condition. Every one knows how readily we perspire when the body is heated by exercise; and in very warm weather we often perspire freely without exercise. Exercise, you know, particularly if it makes us breathe faster, augments the heat of the body, and this renders an increase of perspiration necessary. We here see another evidence of the economy and wisdom of Nature in employing the perspiratory process for the double purpose of relieving the system of its waste matter and its excess of heat at the same time.

We may still add, as another use of perspiration, and one, too, of no small consequence — that of moistening the surface of the body. The skin, as well as every other part of the body, requires a certain amount of moisture for the purpose of lubrication, to keep it soft, pliable, and in a healthy condition, and also to protect it against the action of the atmosphere and other external agents, and against the too ready absorption of poisonous substances.

Importance of Perspiration.— The perspiratory process is one of immense importance in the living machine, and can scarcely be over-estimated. There is probably no other single function of the body which holds so great an influence over the health and integrity of the system. If you have read what has been said of its uses, and will but reflect a moment upon the probable consequences that would result in case it should be suspended, you cannot help but see that it is of the greatest importance. So apparent is this, that it seems almost unnecessary for me to say any thing further on the subject. But, as I wish to make my remarks as useful and practical as my limited space will allow, I propose to glance, for a few moments, at some of the consequences of suspended perspiration, in order that you may the better understand and appreciate the importance of the function.

You know something of Fever. Perhaps you have felt its scorching influence. Did you ever notice, or think of, the condition which exists in Fever? The skin is hot and dry. The whole system seems filled to excess with heat. The heart beats violently, and the blood rushes through the arteries with unwonted rapidity and violence.

There is no perspiration! Did you ever think of that? The prominent condition in Fever is *suspended perspiration.* In fact, this is the immediate cause of Fever. There can be no Fever when the pores are open, and the sweat flowing freely: when the perspiratory organs are in full play and the skin in a healthy condition. Suspended perspiration is not the remote cause—not the exciting, first cause of the disease. It may not be even the second, nor the third cause—for there are often several causes which combine to produce Fever; but it is the immediate cause, the actual, real condition which exists in all cases of general Fever. In treating a case of Fever, one of the first objects of the physician is to produce a free perspiration. If he can do this, and restore a healthy action to the skin, he will have "broke the Fever." In such cases, relaxant and sudorific, or "sweating medicines," are given. And very often a good emetic of Lobelia and Ipecac will afford immediate relief, because it relaxes the pores of the skin and excites the sudorific glands, thus inducing perspiration, by which means the confined heat of the body is allowed to escape, and along with it more or less of the accumulated vitiating matter which acts as an exciting cause of the disease. Cleansing the body well with a weak Alkali, made by adding a little Saleratus, or common Lye, to warm Water, is often beneficial; because it removes from the surface the oily matter which is thrown out by the sebaceous glands, and which is apt to become tough and hard in case of Fever, and obstruct the external openings of the pores. But one of the best means of relief in cases of Fever is the Hydropathic treatment, or Wet Sheet. The cold water absorbs the heat from the surface, relaxes the skin, opens the pores, excites the cutaneous glands, and induces perspiration, quicker, safer, and better, probably, than any other means known. A few good "packings" in the cold Wet Sheet, of an hour to an hour and a half each, will often break up the worst case of ordinary Fever, and simply, too, upon the ground of restoring a healthy action to the perspiratory organs.

In Fever, I have said, the skin is hot and dry, and there is no perspiration. Let us now look, for a moment, into the cause of all this trouble and derangement. One of the principal uses of perspiration is to eliminate from the body its worn-out and morbid matter and poisonous substances. Now, let there be a check of perspiration, from any cause whatever, and what will be the consequence? If it is but slight, we may have unpleasant feelings—Headache, perhaps a Cough, or it may be the Toothache, or Rheumatism, with a dry skin, and more or less Feverish symptoms. The obstruction, however, not being very great, Nature may overcome it in a day or two, and restore things to their normal condition. But let the obstruction be complete, and continued for some time, and then see what

follows. In the first place, all the fetid and waste matter is retained in the system, and is distributed by the blood through every part of the body. And this offensive matter is all the while increasing in quantity. Soon it begins to act as an irritant and poison. The fluids become vitiated; the muscular fibers irritated; than a sort of general inflammation sets in. Add to this the accumulating heat of the body, which is also very much confined, and you can easily see how we may soon have a Fever. In such case, the suppression of the perspiratory process may be the primary or main cause of the disease, for the retained waste matter of the system will soon prove a sufficient proximate or exciting cause, even of the worst kind of putrid and malignant Fever. If the suppression be permanent and complete, the disease may assume the type of what is termed *Continued Fever*, in which case it is apt to be more or less malignant in its character. Should it take the *intermittent* form, however, there will be seasons of relaxation and perspiration, during which a sufficient amount of the waste matter of the system may be thrown off, along with the perspiration, to prevent the disease from assuming a putrescent character. This perspiration — during the intermissions — though it probably relieves the system of much offensive matter, is not a natural, healthy process, but is rather the effect of debility and the relaxation which follows as a consequence, after the excitement of a Fever.

But again: In certain districts, and at certain seasons of the year, especially in hot weather, the atmosphere is more or less loaded with malaria, and, it may be, with other poisonous gases. Suppose the perspiratory process be interrupted or suspended at such times, then all of this noxious matter that is absorbed through the medium of the lungs, will be retained in the system, and the probable consequence will be Fever and Ague. But it may be asked, Do we never have the Ague unless the perspiratory function is interrupted? I presume we do. But the probability is that, in a majority of cases at least, a suspension of perspiration acts as the immediate cause of anticipating or hastening its development. The pulmonary absorption, or imbibation of gases through the medium of the lungs, is very great; and there are no doubt times, in highly malarious districts, when the system takes in more of the poison than can be thrown off by the skin, in which case, if the person remain long enough in the infected district, the poison will accumulate and the disease develop itself, in spite of all that Nature can do to prevent it. This is more especially true of persons in whom the perspiratory function is feeble, or whose skin is in an unhealthy condition. In such cases, where the system is already charged to excess with the Ague poison, a sudden closing of the natural and only process which affords it an outlet — it may be from simply getti. g the feet damp, from sitting in a draft

of air, exposure to the night air, remaining in a cool, damp room, or any thing that will cause a suppression of the perspiration — may develop the disease immediately. If people would attend properly and understandingly to this important function of the system, this great conservator of health, they need seldom have the Ague, and might also avoid many other diseases. You hardly ever see a person have the Ague, or Chills and Fever, whose perspiratory system is in an active, healthy condition — in other words, who sweats freely.

But the Ague is not the only complaint that may result from checked perspiration. There are many other diseases which are often induced by a suppression of this function — such, for instance, as Diarrhea, Dysentery, Rheumatism, Congestion and Inflammation of Internal Organs, Consumption, and Diseases of the Lungs and Throat, Neuralgia, and the like, according as the predominant tendency to any particular disease or condition may exist in the system at the time.

The skin should always, if possible, be kept in a healthy condition; and whenever, therefore, we discover that from any cause whatever its functions have become deranged or suspended, we should lose no time in resorting to the proper means necessary to overcome and remove the obstruction, and bring about a free and healthy action. Persons will sometimes go for several days, or a whole week, with obstructed perspiration, and the attending symptoms of an attack of Fever or some other disease, without doing any thing to remove the difficulty. They know from their unpleasant feelings that they are not well, and they see that they do not sweat any, or if any, very little; the skin most of the time is dry and harsh, accompanied, perhaps, with occasional flashes of heat — until finally they are prostrated by disease; whereas, if they had made use of some simple means at the commencement, or during the early stage of the derangement, such as the Wet Sheet, the Vapor Bath, or a good artificial sweat by means of Warm Teas, aided in obstinate cases by a Lobelia Emetic they might have saved themselves from a long spell of sickness, and perhaps a heavy doctor's bill. There is nothing like taking time by the forelock, in such cases. Remember that the poison, whatever it may be, that produces the autumnal Fevers and Agues of our Western country, comes in at the lungs, and must go out, if it goes out at all, through the pores of the skin. Obstruct this outlet for a little while, and you may have the Ague, the Intermittent Fever, or any other disease, a tendency to which may be prevailing at the time. Keep the emunctories of the skin open and free, and there are ten chances to one that you will escape unharmed.

*BATHING AS A MEANS OF HEALTH.

We have seen, I trust, how important a relation the function of perspiration holds, in the general economy, to the health and well-being of the system. Among the means best calculated to promote a healthy condition of this function, that of frequent bathing may be regarded as holding a pre-eminent rank. Cleanliness of body is one of the necessary conditions of health, because it is essential to a healthy condition of the skin, and, consequently, of the whole perspiratory apparatus. Daily bathing, of some sort or other, is to be recommended at all seasons, but it should be rigidly observed during warm weather. The water to be used for this purpose may be warm, cold, or tepid, according to the time, or as the individual may prefer. But, as a general rule, the morning bath should always be cold, or cool; while the warm or tepid bath is to be preferred at night — except in extreme hot weather, when either may be used.

The Sponge Bath. — In all ordinary cases, the sponge bath may be recommended, on account of its simplicity, and of its being easily obtained at almost all times and places. It consists simply in washing the body all over, by means of a sponge, or cloth, or it may be done with the hands alone, and then wiping dry and rubbing the surface well with a towel. Friction upon the skin is an essential part of the process, and should be used freely and thoroughly, both during the washing and afterward, in drying the surface. It is necessary also that the person immediately after dressing should take free exercise in the open air for a short time, where the circumstances will, in any way, allow of it. None but very great invalids should be allowed to retire to bed immediately after bathing. The exercise may be taken either in the room, or out of doors, when the weather is favorable, as may be most suitable to the condition of the person.

Cold ablutions of this kind are suitable for all persons and constitutions. They may be used by women, children, persons of old age, and those of feeble health and constitutions. They exert a stimulating and strengthening influence upon the system, give tone and energy to the skin and perspiratory organs, promote the secretions and excretions, tend to equalize the circulation of the blood, and to relieve local congestions. Many a feeble constitution has been made comparatively healthy and robust by persevering in their use. They naturally have also a happy and beneficial effect upon the mind and intellect.

In cold weather, the room in which the bathing is performed may be slightly warmed for sickly and debilitated persons, in order to prevent the danger of their taking cold; but for persons in good health,

* See Turkish Bath, page 179.

or sufficiently so for them to get through the operation quickly, and take exercise immediately afterward, this should not be done. As a general thing, a cold room is to be preferred to a warm one, in all cases where the person goes immediately from the room into the open air.

The Shower Bath. — When convenient, the shower bath is an admirable thing — to be followed, of course, with proper friction and exercise. The morning is probably the best time to take it. In order to take this bath properly, it is necessary to have a box or apparatus constructed expressly for the purpose. Most of my readers, probably, will know how such an apparatus should be made. It is sufficient to say here that it consists, essentially, of an arrangement by which the water is allowed to fall upon the body in many small streams at the same time, and the greater the surface upon which they fall, the better. Usually these baths are so constructed that the streams fall perpendicularly, and strike upon the head and shoulders only. But sometimes they are so arranged, by means of leaden pipes, coiled around the inside of the box, somewhat like the worm of a still, which are perforated with small holes, through which the water jets out horizontally, and strikes the body on all sides, at the same time that it falls upon the head and shoulders from above. This arrangement, of course, is the more complete; but the usual plan is amply sufficient for ordinary purposes. The box should be large enough to permit the person to stand erect in it, and still allow the water to fall one or two feet upon the head. At the top of the box may be placed a large tin basin or vessel, the bottom of which is perforated with small holes. Into this the water may be poured from a bucket by an assistant, or it may be conducted into it from a reservoir above. The bath consists emphatically of what its name indicates — *a shower;* any way to produce this will answer. Where there are no better means at hand, an assistant may stand upon a chair, or in some elevated position, and pour the water upon the bather from a common watering-pot, which will answer as a very good substitute for a more perfect machine.

The benefit of the shower bath consists mainly in the general shock, and consequent reaction, which it produces upon the nervous system, and the organs of the skin, whereby they are aroused to increased action, the functions of secretion and excretion promoted, and the whole economy more or less benefited. In order to derive the full benefits of the bath, the water must be cold. From a half minute to one or two minutes, according to the size and force of the streams, is long enough to remain under the shower. Children and feeble persons should be accustomed to the cold water of these baths by first using tepid or but slightly cool water, gradually changing to

colder, until they are able to stand it at the lowest temperature. The shower bath apparatus may be recommended as an excellent thing in a family. It is not only a great preserver of health, but it is valuable as an auxiliary in the treatment of many diseases.

The Full Bath.— This consists in immersing the whole body in water. For this purpose, a tub, vat, or bathing trough, is necessary, which should be large enough to take in the whole person, and be sufficiently roomy to admit of freedom of motion. The water may be warm, tepid, or cold, according to circumstances. At night, it should be warm or tepid; and the person may remain in the bath half an hour.

If cold water is used, it is necessary to prepare the system for it before entering the bath, by first washing the head and neck with cold water, and then the shoulders and chest. This, indeed, is proper in all cases of bathing in cold water. It will prevent too great a rush of blood to the head, and to important internal organs, when the water comes in contact with the whole surface of the body.

The length of time that a person should remain in a cold full bath is but short. The sudden contact of cold with the surface drives the blood from the capillaries of the skin into the larger blood-vessels, and if continued too long, it will necessarily concentrate upon internal organs, and may produce injurious consequences. The time may vary, according to the coldness of the water and the condition of the person. From half a minute to one or two minutes, will be long enough. A minute may be regarded as the average time, and if the water is very cold, half a minute will do. During the bath, the person should also exercise his limbs as much as he can, and rub himself with his hand or a bathing brush, or have an assistant to do it for him. As soon as he leaves the bath, he should quickly dry the whole body, and then make use of severe friction with a coarse towel, or brush, to promote a reaction. It is best for him when he can, to perform the rubbing himself, as it gives the whole body exercise. After dressing, the next thing is to exercise in the open air, whenever the circumstances will allow of it.

The cold full bath is beneficial in all cases where an increased reaction is necessary; where the warmth of the body is unequal, and needs to be equalized; where the organs of secretion are to be invigorated; where the circulation of the blood should be determined to the surface for the elimination of morbid matter from the system; and where the skin is in a feeble or unhealthy condition. It is to be avoided, however, in all congestions and inflammations of important internal organs, in all diseases of the chest, in affections of the brain, and where there is a tendency of blood to the head, in persons of plethoric habits, and where a violent excitement or shock would be

likely to prove injurious. In all such cases, the warm or tepid bath may be used, not only with safety, but often with great advantage.

Besides these, there are several other kinds of baths, principally local in their character, as the head bath, foot bath, sitz bath, and the like, all of which are highly useful under certain circumstances. But as my remarks are intended to show the uses and beneficial effects of frequent ablutions and bathings, to explain the general principle upon which they act, and to urge upon the attention of the reader their necessity and importance, it is not necessary that I should enter into a detailed or special account of the various kinds of baths. The three which I have noticed will include the rest. They all act, more or less, upon the same principle; and when used as a remedial agent in the treatment of disease, if the affection be local in its character, the application of the water should also be local, and *vice versa*, if the disease be general, then should the bathing be general also. For a more extended treatise on bathing, and the use of water, as a remedial agent, the reader is referred to some good work on Hydropathy and the Water-cure Treatment, where he will find a full description of the different kinds of baths and water applications, with special directions how and when to use them in treating the various diseases.

But in all cases of cold bathing, let it ever be borne in mind that the first and most important thing is to secure what is called A GOOD REACTION. This condition will be manifested by an increased cheerfulness, and by a gentle glow upon the surface of the body. To secure this, the water must be cold, the operation performed briskly, and the friction more or less vigorous, as the case may require. When the cold water first comes in contact with the skin, it usually causes the blood to retreat from the capillaries toward the center of the body. But this should only be temporary. The blood should return again quickly to the surface, and should bring along with it an increase of circulatory and nervous activity.

Should the cold bath, after all proper efforts, be followed by paleness of the skin, dullness and inactivity of both body and mind, with more or less chilliness, it is not likely to be useful, and should, for the time, be abandoned. In such cases — which are rare — it will be best to use tepid water, then that which is slightly cool, gradually lowering the temperature, until, in the course of a few weeks at most, the constitution may be so improved, that the coldest water can be used, followed by the desired reaction.

Finally, in order to derive the full benefit from bathing of any kind, and often any benefit at all, it is necessary to observe some system in the matter. Some people seem to think they can bathe indiscriminately in warm or cold water, and at any time of day that

is most convenient. This plan, or rather want of plan, will not do. To many, such a course will be productive of more harm than good. For most persons, perhaps, immediately after rising in the morning is the best time, or as good as any, to take a cold sponge or shower bath. But there are some, particularly females, whose constitutions and general health are too feeble to allow of this. In the morning, the system is in a languid and less active condition, and is not so well able to produce a good reaction. Persons, therefore, of delicate constitutions or feeble health, would do better to defer the operation till the middle of the forenoon, when the system is usually in its best and most active condition. A great change for the better has often been found by adopting this plan. Bathing, like every thing else pertaining to the human system, is subject to certain laws. It is our duty to find out those laws, and then obey them.

Importance of Warmth and Warm Clothing.—*Cold, damp, ill-ventilated rooms are especially hurtful*, and exposure to sudden changes of temperature often gives rise to very severe and acute attacks of rheumatism. Those who are prone to rheumatism may feel annoyed if they perspire much, and are too often unwise enough to try to check the tendency to perspiration by wearing very light clothing, and thus not uncommonly they precipitate an attack. Not only should all persons who have even a slight tendency to rheumatism wear woollen next the skin during the day, but at night they should either have a flannel night-dress or a flannel jacket over their cotton garment. . . . Few of us pass a month without experiencing, in our own bodies, some degree of febrile or inflammatory disturbance, and many are seldom entirely free for many weeks at a time from phenomena of the kind.

The actual process of taking cold is never *immediately* followed by any phenomena which disturb the health or which indicate to the patient himself that he has passed, or is about to pass, from the healthy into an abnormal state. This fact alone seems sufficient to show that the symptoms are not due to nervous disturbance alone, and conclusively show that the change excited is of a nature that the consequences are not immediate.

The condition of the organism which favors "taking cold" is not one of perfect health. The circulation at the time is feeble, and the blood itself not in a perfectly healthy state. Instead of passing quickly through the cutaneous capillaries, the circulation is retarded in the surface-vessels, partly because of feeble heart's action, but mainly, I think, owing to the muscular fibres of the smallest arteries being relaxed. The blood, very slowly traversing the cutaneous capillaries, being far too long a time exposed to the cooling influences perhaps of a draught of cold air, becomes the seat of chemical changes which differ from those ordinarily taking place in the blood constituents. The particular chemical compounds formed are not readily excreted. Remaining in the blood, they accumulate, and minute

bioplasts multiply. At length an influence upon the nerves is exerted, and then ensues the chilliness and other symptoms due to the derangement of the action of many tissues and organs which mark the invasion of the illness. After a time the materials are eliminated, and the patient gets well.

If we promote the action of the excreting organs, we follow the "suggestions of nature" and expedite recovery. Some may think this a rather fanciful explanation; but consider what happens in slight rheumatism, and be convinced that the conclusions arrived at are supported by facts. When the rheumatic state comes on, the patient experiences pain in the muscles and fibrous tissues in many distant parts of the body, which are relieved if free action of the skin, kidneys, and bowels is established. There is no doubt whatever that certain alkaline, diuretic, and purgative medicines excite the desired action, and thus relieve. The increased flow of urine is followed by thirst, to quench which the patient resorts to cooling drinks. Thus the tissues get well washed out, and the peccant materials which cause the pain are by degrees diluted and dissolved away, or are converted into materials readily removed from the body by different emunctories. . . . Whenever unfortunate enough to take cold, make the most of the opportunity, and carefully study the changes as they go on in your own organism.

When the cold is coming on, you may shiver a little, or experience a creeping sensation, apparently in the skin of different parts of the body. Although you feel quite chilly, if you place a clinical thermometer in your arm-pit, you will be surprised to discover that it indicates a rise of three or four degrees above the normal in the temperature of your body, and the very striking and important fact will be impressed upon you that, although you feel inclined to shiver, and desire warm clothing, or to sit by the fire, with a good blanket over you, the temperature of the body is decidedly higher than it ought to be, and may have risen from a little under 98° Fahrenheit, the point at which it stands in health, to 100°, 101°, or 102°. You need not be disturbed or frightened to find that it marks 103°. You will also notice that, if you get into a free perspiration, all the uncomfortable sensations had during perhaps several hours will disappear. If, as soon as you feel warm, and especially if you have perspired a little, you again use the thermometer, you will find that the temperature has fallen a degree or two. After you have perspired very freely, it will fall lower still, and probably stand at the normal.

Not only is a cold a form of fever, but in many colds there is evidence of a certain, and in some a considerable, degree of inflammatory action. The mucous membrane of the nasal passages, of the larynx, trachea, and bronchial tubes, of the pharynx, and many of the small glands connected with these surfaces, are red and "inflamed." The capillary circulation in them is impeded, and if a minute examination be made we shall find evidence of undue growth of the bioplasm of the epithelium and adjacent structures.

Many of the symptoms which usher in an ordinary cold precisely resemble those which occur in some special form of fever; in fact, a cold must be included among the *Febrile Diseases.*

DOMESTIC AND SANITARY ECONOMY,

EMBRACING MANY

STANDARD AND VALUABLE FACTS

AND SUGGESTIONS RELATIVE TO VENTILATION; PURE AND IMPURE AIR; WATER; WATER SUPPLY; PURIFICATION OF WATER; CLEANSING; DRAINAGE; DISINFECTANTS; AND OTHER COGNATE SUBJECTS.

PREFATORY.

THAT it is the duty of every person to live as long and as well as possible, not only in intellectual and spiritual health, but also in soundness and vigor of body, will not be questioned. That he who sins against his body, and allows it to come to premature decay, or who persistently refuses to inform himself in respect to measures preventive of disease, is as much a criminal as he who violates the ordinances of the State; and that while this is true of an individual, it is equally true of a community.

Furthermore, all experience has shown, that no investment of time or money is so certain to bring a rich return, as that devoted to the acquirement of a knowledge of the physical Laws of Health, and to the enactment and enforcement of Sanitary measures.

If it is desirable to know how to cure disease, it is much more important to know how to prevent it.

Impressed with these views, this treatise has been prepared for this work, and is herewith presented to the public.

TROY, NEW YORK, July 6th, 1864.

DOMESTIC AND SANITARY ECONOMY.

VENTILATION.

THE *two* great requisites for the healthy existence of human beings, are, due and proper supplies of *pure air* and *pure water*. Without these, the most abundant food and all the appliances furnished by Science and Art, will be of little avail; and yet, by a singular inconsistency in human conduct, there would seem, says Dr. Bell, to be a fixed determination, on the part of the majority of mankind, to deprive themselves of these essential elements of health.

Of the two great requisites for healthy existence above named, air may be considered as the *prime necessity of life*. We can live more days without food or water, than we can live minutes without air. In order to understand fully the relation which air sustains to the vital economy, it is expedient to consider, *first*, the constitution of our atmosphere, and *secondly*, the office and function of respiration.

Constitution of the Atmosphere. — Atmospheric air consists essentially of nitrogen and oxygen,* mixed together in the proportion of four-fifths, by volume, of the former, to one-fifth of the latter. More correctly, the composition of air which has been freed from the presence of all foreign ingredients, may be represented by measure and weight, as follows:

	BY WEIGHT.	BY MEASURE.
Nitrogen,	76·90	79·10
Oxygen,	23·10	20·90
	100·00	100·00

* Oxygen is a kind of air, or gas, which, like the atmosphere itself, is without color, taste or smell. A candle burns in it with much greater brilliancy and rapidity than in common air. Animals, also, breathe in it with an increase of pleasure; but it excites them, quickens their circulation, throws them into a state of Fever, and finally kills them by an excess of excitement. They live too rapidly in pure oxygen gas, and burn away in it like the fast flaring candle.

Nitrogen is also a kind of air, which, like oxygen, is void of color, taste and smell; but a lighted candle is instantly extinguished, and animals cease to breathe when introduced into it.

Oxygen is one-ninth part *heavier*, and nitrogen one-thirty-sixth part lighter, than common air.

In addition to oxygen and nitrogen, the atmosphere always contains small and variable proportions of carbonic acid gas and aqueous vapor, and very often minute quantities of ammonia, nitric acid, the aroma of flowers, and various other organic and inorganic products; in short, as the sea contains traces of almost every thing that is soluble, so the air contains traces of almost every thing that is volatile.*

The oxygen and nitrogen existing in the air are merely intermingled, and not chemically combined with each other; but their relative proportions never vary. This has been proved by the analysis of air collected upon the summit of Mount Blanc, and upon the Andes, at an elevation of 21,000 feet, by Guy Lussac, in a balloon; over marshes; in hospitals; over deserts, and at the bottom of the deepest mines.

The quantity of carbonic acid, on the contrary, being much influenced by local causes, varies considerably. The average quantity is 4.9 volumes in 10,000 of air, but is observed to vary from 6.2 as a maximum, to 3.7 as a minimum, in 10,000 volumes. Its proportion near the surface of the earth is greater in summer than in winter, and during night than during day. It also is rather more abundant in elevated situations, as on the summits of high mountains, than in plains. This is probably owing to an absorption of the gas near the surface of the earth, by plants and moist surfaces.

Notwithstanding a difference in the density of the principal constituents of the atmosphere — nitrogen, oxygen, carbonic acid, and the vapor of water — and notwithstanding, also, the absence of any chemical union between them, they are always, through the action of a beautiful law of Nature, known as the law of "the diffusion of gases," found uniformly mingled together. The operations, also, of combustion, respiration, vegetation, and the like, continually going on upon the earth's surface, remove great quantities of oxygen from the air, and substitute a variety of other gases, the principal of which is carbonic acid; yet so beautifully adjusted is the balance of chemical action in Nature, that no perceptible change in the composition of the atmosphere has been observed since accurate experiment on the subject was first commenced.

* Carbonic acid is a kind of air, which, like oxygen and nitrogen, is void of color; but, unlike them, possesses a slight odor and a perceptibly sour taste. Burning bodies are extinguished, and animals cease to breathe when introduced into it. It is one-half heavier than common air, and can therefore be poured through the air from one vessel into another. Carbonic acid is produced abundantly by the combustion of carbon (*i. e.* wood, coal, gas, etc.) in oxygen gas or atmospheric air; by respiration, fermentation, and by the decay of animal and vegetable substances. It exists, as above stated, in the atmosphere, and in the earth in immense quantities, chiefly in combination with lime, forming carbonate of lime (marble, chalk, etc.). By aqueous vapor is meant the steam, or vapor, visible or invisible, which ascends from a surface of water when exposed to the air. When water is spilt upon the ground in dry weather, it soon disappears; it rises in invisible vapor, and floats buoyantly among the other constituents of the atmosphere

Organic matter of some kind, is almost always present in the atmosphere ; but it not unfrequently happens that chemical tests fail to detect it, when the sense of smell and a peculiar effect upon the human constitution give abundant evidence of its presence. This is especially true of the odoriferous matters of flowers, and the miasmata of marshes. Dew collected over rice-fields often contains so much decomposing organic matter, as to become putrid after standing for a short time. Exposure to the night air of these localities, in the hot season, invariably produces in the Caucasian race malignant and almost incurable Fevers.

The principal office which nitrogen appears to sustain in the atmosphere, is that of a diluent of the oxygen. If the quantity of oxygen in the air was increased much beyond its present proportion, the inflammability of most substances would be greatly augmented ; and the functions of life would be called into such rapid action as to soon exhaust the powers of the system. Nitrogen being the most indifferent of all substances, and wanting in any poisonous qualities dilutes the too active oxygen, and prolongs its action upon the system, in the same way as water dilutes and diminishes the stimulating action of spirituous liquors. Recent researches have also rendered it probable that the nitrogen of the air discharges an important office in respiration, by preserving the volume and tension of the cells and extreme tubes of the lungs. — *Wells' Principles of Chemistry.*

Respiration. — All animals, as already stated, require for their continued existence a free supply of atmospheric air. It is also necessary that this air should have free access to the interior of their structure, and the act or process by which this is accomplished is called *respiration*, or *breathing*. To breathe, in the usual acceptation of the term, is to draw in atmospheric air through the mouth and nose, into the lungs, and after a brief interval, to throw it out again. The organs by which the act of respiration or breathing is performed, differ essentially in different species of animals. In the lowest types of the animal kingdom, as the polypes, respiration is accomplished exclusively through the skin. Insects also draw in air into their system, or, in other words, breath, by means of organs called *tracheæ*, or windpipes — tubes which penetrate in various directions through their bodies, and terminate externally in little orifices called *stomata*. If we smear the body of an insect, as a wasp, with thick oil, we close up the stomata, and the insect speedily dies of suffocation. All vertebrate animals are endowed with localized organs of respiration, which are termed *lungs*, or *gills*. In man and the higher animals, the lungs consist of two rounded, oblong, somewhat flattened masses, of very cellular substance, situated in the cavity of the chest, and communicating with the atmosphere through the windpipe, or

tracheæ. The general form of the human lungs is represented in Fig. 8, page 963. The air or windpipe, 4, as it descends from the throat, branches off into large (bronchial) tubes, 5 and 6, and these again into smaller and still smaller, and finally into hair-like or capillary vessels. (For a minute description of the Respiratory Organs, see pages 962–964, etc.)

In man the skin also is to some extent a respiratory organ, through which air enters and escapes, as it does from the air-vessels of the lungs, though less rapidly. When a portion of the skin has been burned, it is no longer capable of exercising the function of respiration, and the lungs are therefore obliged to perform extra duty, and suffer in consequence. Hence, diseases of the lungs are a frequent result of extensive burns.

The proportion of oxygen gas which atmospheric air contains, is very nearly twenty-one gallons in every hundred. After it has visited, however, the human lungs, this proportion is reduced to sixteen or eighteen in a hundred, and sometimes lower. The lungs, therefore, extract or absorb from the air which enters them, from one-seventh to one-fifth of its oxygen; and the absolute weight of the oxygen, thus introduced into the system in a day, is estimated to be equal to about one-fourth of the weight of the whole food, solid and liquid, which an animal consumes. The absorption of oxygen takes place in the minute air-cells of the lungs, through the thin, membranous walls of which it passes, by a process termed *endosmosis*, into the adjacent bloodvessels, and combines with the blood contained in them, imparting to it the bright scarlet color which is characteristic of arterial blood.

Uses of Respiration. — From what has been already said, it must appear evident that the principal object of respiration is to introduce the oxygen of the atmosphere into the blood; which last contains the nutritive portion of the food digested and assimilated in the stomach. Now, the purpose which oxygen subserves in the blood, is threefold:

1st. *It assists in building up the substance of the body.*

2d. *It assists in removing waste and effete matter from the system.*

3d. *The absorption of oxygen produces animal heat.* (See pages 996 and 997 for fuller statements concerning Respiration.)

Animals whose respiratory organs are small and imperfect, and which, therefore, consume but a comparatively small amount of oxygen, possess a bodily temperature but little elevated above that of the medium in which they live; animals, on the contrary, whose lungs are large in proportion to their bodies, and respire frequently, possess the highest bodily temperature. In man, the mean temperature of the body is about 98° F. The temperature of a healthy

child, who consumes proportionally more oxygen and respires more frequently than an adult person, is somewhat higher, 102° F. In birds the temperature is from 104° to 108° F. The temperature of the same animal also at different times, varies with the activity of the respiration. When the blood circulates slowly, and the temperature is low, the quantity of oxygen consumed is comparatively small; when, on the contrary, the circulation by vigorous exercise or labor is accelerated, a large quantity of oxygen disappears, and the animal heat rises.

What is Ventilation? — The atmosphere by which we are surrounded, and *from which*, as already shown, our systems derive, by means of respiration, the oxygen or vital element of the air, is at the same time the great reservoir into which flow all the exhalations from the bodies of men and animals, and the gaseous products resulting from the decay of animal and vegetable substances upon the surface of the earth. These emanations, if allowed to accumulate upon the immediate surface of the earth, would prove destructive to all the higher forms of animal life; but nature, through the agency of winds and currents, and through the process of the "diffusion of gases,"* prevents such an accumulation of deleterious matters, and distributes them equally through the whole atmosphere; from whence

*Every gas, or gaseous mixture, possesses the property of diffusing itself equally through every other gas with which it is brought in contact, and this, too, in opposition to the action of their weight, or gravity. Every gas, moreover, appears to act as void, or empty space for another; or, in other words, it spreads, or expands into the space occupied by another gas, as if it were a vacuum. The same law applies also to vapors. Thus, as much steam can be forced into a space filled with dry air, as into a space absolutely devoid of air, or any other substance. This force, or law, regulating the diffusion of gases, is one of great practical importance in the operations of Nature, and is often referred to as a most remarkable evidence of design on the part of the Creator. Thus, carbonic acid, which is a deadly poison when inhaled, is one and a half times heavier than common air. The atmosphere contains about one part in two thousand of this gas, uniformly diffused through it — the same quantity being present in air collected on the tops of the highest mountains and on the level surface of the earth. If the law which produces such a complete diffusion were suspended, this heavy gas would accumulate under the influence of gravitation as a bed or layer in the lower part of the atmosphere, and render the immediate surface of the earth uninhabitable. By reason of this same law of diffusion, the carbonic acid gas which is abundantly formed in every process of combustion and in respiration, and the noxious gases discharged from sewers, and from all decaying matter, are silently and speedily dispersed, and prevented from accumulating. The equitable diffusion of vapor of water through the atmosphere, in accordance with the same law, is no less important than the diffusion of gases. But for such diffusion, the whole surface of the earth would have assumed the condition of an arid desert. Water is 800 times more dense than air, yet the particles of water, in the form of vapor, ascend into the atmosphere, and diffusing themselves everywhere throughout its substance, give rise to the phenomena of dew and rain. It is through the operation of this principle also, that we are enabled to perceive and enjoy at a distance the fragrant odors which arise from volatile substances; and were its action suspended, the sense of smell would be nearly unknown to us. — *Wells' Principles of Chemistry.*

they are, in the main, removed through the action of vegetation. Now, the operations of man, consequent upon his civilization, are opposed to those of Nature in respect to the purification of the atmosphere. Cities, towns, houses, and apartments, which men build and live in, are barriers and obstacles to the free diffusion and penetration of air, and of the heat and light of the sun ; they also become centers for the emanation of the poisonous exhalations arising from the functions of life, the decomposition of organic substances, and the results of economic or industrial operations. Now, the methods by which these exhalations are removed, and a free circulation of air necessitated, is *ventilation ;* and the more complete it is in a community, the healthier are its inhabitants ; while, on the other hand, its imperfection and neglect are sure to be productive of disease and mortality.

How the Air we Breathe is Rendered Impure. — To enable us to efficiently guard against the use of impure air, it is essential that we should have, in the first instance, a correct and clear idea of the sources from whence the impurities in question are most commonly derived ; and to this point we would next direct attention.

The composition of the air which escapes from the lungs, is not the same as that which enters — about one-fourth of each inspiration being altered while in the lungs, and rendered unfit for subsequent respiration. This alteration consists, *first*, in the abstraction of the vitalizing element of oxygen — from one-fifth to one-seventh of the amount inspired being directly absorbed by the lungs ; and *secondly*, by the addition of the gas, carbonic acid, which, together with volatilized animal matter, is given out by expiration, and passes into the outer and common atmosphere. A man of ordinary size, making fifteen inspirations per minute, vitiates, therefore, in this space of time, *about the sixth part of a cubic foot of air ;* but this, mixing, as it escapes, with many times as much of the air around, renders unfit for respiration three or four cubic feet.

The amount of pure carbon thrown off the lungs of a full grown man in the form of carbonic acid, in a space of twenty-four hours, varies from 5 to 15 ounces ; while the quantity which escapes from the skin (which is also an organ of respiration) during the same time, is estimated at from 50 to 60 grains. Now, carbonic acid, as has already been stated, is, in its pure state, wholly irrespirable, and produces, the moment it is inhaled, a spasm of the glottis, which closes at once the air-passages of the lungs — an animal immersed in it, therefore, dies of suffocation. It possesses, moreover, direct poisonous properties, and may produce death, even when inhaled with a large admixture of air. Dr. Carpenter, the celebrated English physiologist, states, that air containing five or six per cent. of carbonic acid

is speedily destructive of animal life; while Dr. T. Herbert Barker ascertained that an animal in an atmosphere containing only two per cent., will die in about two hours. Now, the usual proportion of carbonic acid in the atmospheric air is rarely as great as one part in a thousand; and when this is increased to one part in one hundred, its injurious effects begin to be felt by man, in headache, languor, and general oppression. But in the air exhaled from the lungs, the quantity of carbonic acid is never less than three per cent., and may rise as high as five, or even six per cent., and hence, if *exactly the same air* thrown out from the lungs were reinhaled, death would speedily ensue.

But carbonic acid, furthermore, is a substance which is constantly accumulating in the blood, and if it is not as constantly removed, death will also result from this cause. In fact, we may consider the process of breathing as but an instinctive effort of Nature to free herself from the presence of this poison. But air which has once been in the lungs will no longer perform this office, for the reason that it is already saturated with carbonic acid. Hence the necessity of inhaling fresh air at every breath. The importance of this is illustrated by the following extract from a recent publication on this subject, by the eminent English physician, Dr. Southworth Smith. He says: "Stop the respiration of an animal, or confine it to an air which has already been respired, and carbon accumulates in the venous blood and mixes with the arterial blood. In half a minute, the blood flowing in the arteries is evidently darker; in three-quarters of a minute, it is of a dusky hue; and in a minute and a half, it is quite black. Every particle of arterial, or red blood, now disappears, and the whole mass becomes venous, sensibility is abolished, the animal falls down, and in three, or at most four, minutes, the heart entirely ceases its action, and can never be again excited." Now, if effects are proportionate to their causes, and if an atmosphere impregnated with *five* per cent., or one-twentieth of its volume, of carbonic acid, will thus produce death in a few minutes, what must be the probable effect, for a series of years, over the much more minute proportions which must be present in every inhabited room where there is not a constant ingress and egress of air? It must lower the standard of health and shorten the duration of life.

But it is not by the exhalation of carbonic acid alone that we impair the purity of the atmosphere which surrounds us. There is constantly discharged, by the lungs and pores of the skin, a large quantity of effete, decaying animal substances, in the form of insensible vapor, which we often see condensed in drops upon the windows of crowded rooms, railroad cars, etc. These drops, if collected and evaporated, leave a thick, putrid mass of animal matter, and the breathing, or re-inhalation of air containing these vaporous exhala-

tions from the system, is believed to be quite as efficient in producing disease as carbonic acid itself. The amount of fluid matter exhaled in twenty-four hours from the lungs and skin of an adult, average size man, is about three or four pounds. The largest quantity ever noticed, except under extraordinary circumstances, was five pounds, and the smallest, one and two-thirds pounds. Two persons occupying a bed for eight hours, will impart to the sheets, by insensible perspiration, and to the air of the apartment by breathing, at least two pounds of watery vapor, charged with animal matter, in a state of decomposition.

Now, the Creator has provided for the constant and complete removal of all these poisonous exhalations of the lungs and skin, by causing the expired air and vapor to rise, by its increased warmth and consequent levity, quickly above our heads, and therefore beyond the reach of a second and immediate inhalation. The air which issues, for example, from the chest, is very near the temperature of the body, viz.: 98° F., and is, in consequence, lighter, bulk for bulk, than the surrounding air at any ordinary temperature; it therefore rises in the atmosphere as oil set free under water rises, and would be diffused and carried away by the winds, did we not, by impervious ceilings and tight walls, obstruct the operation of this beneficent law.

Many persons suppose that they fulfill all the laws of cleanliness, when they have bathed and washed the surfaces of their bodies suffi ciently with pure water. But cleanliness, in its true comprehensive meaning, can not be carried out so as to meet the wants of the animal economy, unless the lungs and skin are equally as well bathed with pure air. "Our senses revolt at the mere offer of dirty water to drink; but Nature displays an equal repugnance when dirty — that is, impure — air is offered for breathing; and no less injustice is done to the lungs by the inhalation of foul air, in which are floating, at the same time, particles of fine dust, arising from different substances in manufacture, than would be to the skin, if, first, ditch or gutter water, and then sand and dirt, were sprinkled over it. The very idea of swallowing, or even tasting, the fluid substances ejected as excreta, or thrown off by disease from the body of another person, or even from our own, is abhorrent to all; and yet, how few scruple about receiving into their lungs, by respiration, the impure exhalations from the lungs of every body in the same room with themselves! But they are doing more at this time: they are inhaling not only the foul air which escapes from the lungs, but, in addition, the cutaneous emanations of all present on such an occasion."

It is the presence of animal matter, in a state of decomposition exhaled from the skin, which gives to garments that have been worn too long, the characteristic foul odor which they possess.

In addition to the agencies already named, which tend to render the air we breathe impure, the means employed for illuminating our apartments are also sources of contamination. These affect the air like the process of respiration; *i. e.* they consume oxygen and produce carbonic acid. "A candle (six to the pound) will consume one-third of the oxygen from ten cubic feet of air per hour; while oil-lamps, with large burners, will change, in the same way, seventy cubic feet per hour. As the degree of change in the air corresponds to the amount of light evolved, it is plain that gas illumination alters the air most rapidly." An ordinary gas-burner is estimated to generate as much carbonic acid gas as the breathing of four persons — or more than one hundred and sixty cubic inches per minute.

The influence of the few green-house plants, that are usually kept in occupied apartments, upon the air, is probably very slight. The presence of plants in flower, in sleeping apartments, is, however, generally considered objectionable; and various ill effects produced by them in such situations have been noticed. These, if actually occurring, are probably due to the volatilization of certain volatile oils contained in the glandular vessels of the plants, many of which oils, in even very small quantities, are known to act powerfully upon the animal system.

Practical Effects of Imperfect Ventilation.—Having pointed out the most common agencies by which the air we breathe is rendered impure and unfit for respiration, we will now ask attention to some of the effects which modern Sanitary investigation have shown to result from imperfect or bad ventilation.

In New England, statistics show that agriculturists, who pass their days mainly out of doors, live to an average age of 64 years; while the average age attained to by persons who have in-door employments, is as follows: Shoemakers, 43; tailors, 42½; editors, 41; druggists, jewelers, and teachers, 39 to 40; machinists, 38½; printers, 36½. Fresh air, therefore, almost doubles a man's life, while it more than doubles the capacity for enjoyment.

The annual mortality of the population of the State of New York, exclusive of New York city, is 8.8 in every 1,000; the annual mortality of the population of New York city is 36.9 in every thousand. Now, in the testimony of the most eminent physicians of New York city, recently taken by the "Association for Improving the Condition of the Laboring Classes in the City of New York," it was affirmed by all who had given attention to the subject, that the chief cause of the increased mortality in New York, arose "*from the great number of inhabitants living with the smallest amount of air* that is necessary to keep life in them, and the smallest possible quantity of light with which they can see and get along with." These causes were further-

more proved to produce a much greater mortality than bad food or bad clothing, by the fact that people who live in the same way, with the same food and clothing, but in better localities, have seventy-five per cent. less mortality than those living in dark, unventilated places.

Dr. Meredith Reese, in his testimony before the same committee, laid down this proposition: "That the true criterion and best index of atmospheric impurity, in any city or other locality, is manifested in young children, whose greater susceptibility to morbid causes, by reason of their greater delicacy of structure, renders them the earliest victims of atmospheric poisons." Now, the infant mortality of the large cities and towns of this country, is shown by statistics to be increasing with terrible rapidity. In Boston, the percentage of the deaths of children under ten, doubled from 1830 to 1850; while in New York city, the deaths of children to each 100,000 inhabitants, has more than trebled since 1810.

The morbid effects of crowding, and deficient ventilation, are also well illustrated by comparison of the state of health of two wards in the city of New York. In 1856, in the Sixth Ward, there were 25,000 inhabitants, having 1,400 dwellings; and the deaths were 1,089. In the Fifteenth Ward, the population the same year was 24,046, living in 2,445 dwellings; and the deaths among them were 436.

But the evil consequences of crowding and defective ventilation, are not confined to the poor and destitute. Wherever people are brought together for religious worship, for amusement, or recreation, in the halls of legislation, in courts and school-houses, the neglect of ventilation is the rule, and attention to this paramount means of preserving health the exception.

Dr. Carpenter, from whom we have already quoted, illustrates the liability we are to suffer from the gradual accumulations of carbonic acid in the air we breathe in our apartments, by the following statement: "A man may be presumed to produce in 24 hours about 10 cubic feet of carbonic acid. Now, if he were inclosed in a space containing 1,000 cubic feet of air (such as would exist in a room 10 feet square and 10 feet high), he would, in 24 hours, communicate to its atmosphere, from his lungs, as much as one part in 100 of carbonic acid, provided that no interchange takes place between the air within and the air outside of the chamber. The amount would be further increased, also, by the carbonic acid thrown off from the skin, the quantity of which may be considered as undetermined. In practice, such an occurrence is seldom likely to take place; since in no chamber that is ever constructed, except for the sake of experiment, are the fittings so close, as to prevent a certain interchange of the con

tained air with that outside. But the same injurious effect is often produced by the collection of a large number of persons for a short time in a room insufficiently provided with the means of ventilation. It is evident, that if twelve persons were to occupy such a chamber for two hours, they would produce the same effect with that occasioned by one person in twenty-four hours. Now, we will suppose 1,200 persons to remain in a church, or assembly room, for two hours; they will jointly produce 1,000 cubic feet of carbonic acid in that time. Let the dimensions of such a building be taken at 80 feet long, 50 broad, and 25 high; then its cubical contents will be ($80 \times 50 \times 25$) 100,000 cubic feet; and thus an amount of carbonic acid equal to one hundredth part of the whole will be communicated to the air of such a building, in the short space of two hours, by the presence of 1,200 people, if no provision is made for ventilating it. And the quantity will be greatly increased, and the injurious effects will be proportionably greater, if there is an additional consumption of oxygen, produced by the burning of gas lights, lamps, or candles. Hence, we see the great importance of providing for free ventilation, wherever assemblages of persons are collected together, even in buildings that seem quite adequate in point of size to receive them; and much of the weariness which is experienced after attendance on crowded assemblages of any kind, may be traced to this cause."

In modern houses, the neglect of ventilation is extreme, as far as regards recourse to any other means of obtaining it than the windows of the rooms. All the fireplaces, as they used to be called, are hermetically sealed by slabs of marble or metal; and when the register of the furnace flue, by which warm air is introduced, is closed at night, or when the room becomes too warm in the day, there is no aperture, either for the admission of fresh air from without, or for the escape of foul air from within. During the night, the windows and doors are closed, and the supply of air fitted for respiration becomes exhausted long before morning; especially if, as is so commonly the case, there are several persons sleeping in the same room. Headaches, restless slumbers, nervousness of various kinds, palpitations, oppressed breathings, and loss of appetite, are no unusual effects of defective ventilation in the houses of the wealthy; who, at the very time, may be commiserating the poor for their small and close apartments.

"Both proprietors and builders of houses," says Dr. Bell, of Philadelphia, (from whose publications on Sanitary Science we have derived many of our illustrations), "are for the most part quite ignorant of all desirable knowledge in respect to ventilation. Divisions of rooms for business or family wants, and decorations externally after some order, Greek or Gothic, are the only things thought

of in relation to modern structures. How the inmates are to procure an adequate and continual supply of fresh air, and how to get rid of that which is impure, are not even secondary matters; they are sometimes discussed as curious questions of philosophy, but seldom with a view to their direct bearing on health. Wearied, oppressed, and giddy, with palpitating hearts and hurried breathing, how many, after leaving church, have mistaken their really disturbed state of the physical man, for those which result from the workings of the spirit; and have returned to their homes, full of terrors for the state of their souls, when, in reality, they were suffering from a disorder of their corporeal functions, induced by impure and half-poisoned blood circulating through their veins?"

School-houses, furthermore, where most especially an efficient system of ventilation is needful, are also generally, and, we may say, cruelly neglected. The children who sit in them for many hours daily, require, above all other members of the community, a continual supply of fresh air for their healthy growth, and to allow of their tender brains being tasked without detriment and continual danger to their intellects. The originally indolent boy becomes, in an imperfectly ventilated school-room, a hater of lessons and of books; while the boy desirous to learn, and emulous of instruction, becomes exhausted by his brain-work, and his nervous system acquires a morbid sensibility, which remains with him during all his after-life.

Close bed-room air is held, by some eminent and recent medical authorities, to be the most efficient of known causes for producing Scrofula and Consumption. M. Baudsloque, an eminent French physician, who has made part of the above named diseases a special study, says: "Invariably it will be found, on examination, that a truly Scrofulous disease is caused by a vitiated air; and it is not always necessary that there should have been a prolonged stay in such an atmosphere. Often a few hours each day is sufficient, and it is thus that a person may live in a most healthy country, pass the greater part of each day in the open air, and yet become Scrofulous, because of sleeping in a confined place, where the air is not renewed."

Bad air in workshops and manufactories, besides directly inducing disease, is a very efficient agent also for promoting intemperance. The workmen inhaling impure air, experience, as the most common effect, a depression of spirits and a loss of appetite. The natural and obvious recourse, therefore, is to a stimulant; and the cheapest and most readily available one is alcoholic spirits. In addition to those already enumerated, other agencies, which constantly tend to impair the air we breathe, are the gaseous secretions given off by uncovered or improperly constructed and located sewers, drains, cess-pools, cellars, etc. This fact is so self-evident, that little needs be said in this

connection, other than to illustrate, by evidence, the virulent and actively poisonous nature of the emanations in question.

In a series of investigations made a few years since in London, under the direction of the "Commissioners of Public Health," it was found that a mouse, exposed in a cage to the air of a cess-pool, within three inches of the surface, although it was well fed at intervals, died on the fifth day. Dogs thus exposed, suffered from Vomiting, Diarrhea, and Febrile Symptoms, Restlessness, and Loss of Appetite. One of the principal gases contained in sewer emanation, is sulphureted hydrogen; and it was found that so minute a quantity of this gas in common air as 0.056 per cent. (fifty-six parts in a thousand), was sufficient to produce serious symptoms, rapid and irregular respiration, extraordinary rapidity of the pulse, and Diarrhea. A puppy exposed to less than two per cent. of sulphureted hydrogen in common air, was destroyed in 2½ minutes, without a struggle; and so small a proportion as 0.428 per cent. killed another in an hour. But passing over any further description of the acute forms of poisoning by sewer-gases, when inhaled in their undiluted state, their general effects, when much diluted with atmospheric air, remain to be noticed. These are a general prostration of the vital powers. "The appetite," says Dr. Letherby, an eminent English authority on this subject, "fails; the bowels become disturbed; Diarrhea of a chronic character sets in; and the sufferer is either worn out by exhaustion, or he falls into a state of low Fever, from which it is difficult to raise him." The same authority also gives the following illustration of the poisonous effects produced by the inhalation of very small quantities of sewer-miasm, which is well worthy of attention for the lesson of caution which it furnishes. A small lodging-room in Paris, consisting of a bed-room and ante-room, was brought to the attention of the medical commissioners, from the circumstance that it had been successively tenanted by three vigorous young men, each of whom died within a few months after his occupancy of the place. On examination, it was found that a pipe from a privy on the upper floor, ran down by the side of the wall, near the bed where the inmates slept. The pipe was unsound, and the wall was damp from leakage into it; but there was no perceptible smell from it. Nevertheless, the commissioners had no doubt that the deaths of the former occupants were referable to the emanations from the wall; and it resulted, that when the pipe was repaired, the unwholesomeness of the place was cured.

The air of houses is also liable to become impaired through foul emanations proceeding from cellars; this being especially the case where the reprehensible custom prevails of using the cellars as receptacles of most perishable products, vegetables, etc. Malignant Typhus

Fever, in isolated farm houses, has often been traced to this cause. But it is not, however, necessary that the cellars of a house should contain decaying garbage to generate foul air, as air always degenerates when confined; and if it is merely in contact with the surface of earth charged with organic matter, it soon becomes saturated with exhalations detrimental to health. Every one must have observed the musty, "close" smell of the air that pervades perfectly dry closets and rooms in the upper parts of houses, which have remained shut up for any length of time; how much more impure, then, must be the air confined in cellars, which are almost always cold, damp, unclean, and moldy? "Many an invalid who fancies himself improved by a change of air, in going to another residence, is really relieved by escaping the moldy atmosphere which comes from beneath his own ground-floor."

Means of Ventilation.—Having noticed, in brief, the principal sources and agencies by which the air we breathe is rendered impure, and also the deleterious results which follow imperfect ventilation, we are now better prepared to inquire into the means of the cure and prevention of the evils described.

In the first place, unless sanitary measures have been taken to secure the purity of the external atmosphere by effective drainage, cleansing, and prevention of nuisances, no system of ventilation for the interior of our dwellings, churches, school-houses and work-shops can be successful. Assuming, however, that the purity of the external atmosphere is guaranteed, the next question that arises is, how great should be the constant supply of pure air to insure the preservation and continuance of health? Upon this point authorities differ. The lowest estimate given, as within the limits of safety, is *four cubic feet per minute, or two hundred and forty per hour.* Dr. Reid, who is regarded as the highest English authority on the subject, fixes on *ten cubic feet of pure air per minute* for the respiration of an adult person, as certainly quite low enough for an average of comfort and safety. In a draft of a sanitary code recommended to the Legislatures of different States by the National Sanitary Convention, which assembled in New York city in 1859, it was provided that no house or apartment, intended for the constant occupation of not less than ten persons, or for the occasional assemblage of large numbers of persons, should be allowed by law to be used, or occupied, "unless the same shall be provided with ventiducts for supplying fresh air of a suitable temperature, which shall have a capacity of not less than one hundred square inches for every twenty-five persons, and in the same proportion for any greater or less number; or by some other mode capable of supplying fresh air to each person, at the rate of four cubic feet per minute;" and further, that each house thus occupied, shall

be provided with "discharging ventiducts, which open directly into heated flues; or which are conducted into the outer air above the roof, and then terminated by a suitable cowl or cap, and which shall have a capacity of not less than two-thirds of that of the admitting ventiducts;" or, in place of this, "an open fireplace.'

In judging personally of the amount of fresh air to be supplied to our houses, or apartments, the rule should manifestly be, not to limit ourselves to that supply which the constitution can bear or tolerate, but to that amount which will sustain the highest state of health for the longest time. The cheapest and most simple plan of ventilation is that which looks to the natural movements of the air, by a simple interchange between that of the interior of a house and the external atmosphere.

When there is an open fireplace in the room, a well-constructed window, capable of being opened above and below, realizes all the essential conditions for effective ventilation. This, however, will not answer when the weather is severe; and an open fireplace is, moreover, becoming a rare thing in city and town houses; its place being supplied by a stove, or, more generally, by a register for the admission of warm air from a furnace in the cellar or basement.

Another simple, but at the same time an efficient and most gentle mode of ventilation, is the admission of external air through a perforated zinc plate, or fine wire gauze, which is to replace a pane of glass in a window of the room to be ventilated. The plate is perforated with two hundred and ninety holes to the square inch. It, or the wire gauze, is generally introduced into the upper part of the window, and in the place of the corner pane, the farthest from the fireplace or heater. The fine orifices in the plate, or gauze, prevent the air from coming in with a rush, (which would occasion discomfort,) and they tend also to diffuse the air equally and gently through the apartment. No draft is felt, unless a person be seated immediately under the window. Besides the introduction of pure air from without into the room by this method, there is also, all the time, an interchange between the air without and the heated and impure air within, which latter thus finds vent, and is thus carried off. This interchange takes place on the principle of "the diffusion of gases," which has already been explained.

Another plan of ventilation still, based on the natural movements of the air, is by means of an opening in the walls or ceiling which lead to the external air, and which is protected by a shield or disk, say two inches larger than the aperture. The external air, in impinging against the side of this shield, is split up into a thin circular radiating sheet, and at a short distance below, not more than two feet, a person can not feel cold entering, nor can a hand detect a

draught, at eight or ten inches distance from the edge of the disk. The sheet of air may be modified, according to the distance of the shield from the aperture.

In order, however, to render ventilation perfectly complete, and effectual, it is generally considered expedient to have the channel of exit for impure air independent of and separate from that which supplies fresh air. A simple opening between a room and the external air, will not, of necessity, produce a current of air. An interchange of air will certainly take place in virtue of the law of the diffusion of gases, but in order that a current may be established, a difference of temperature between the external and internal air must exist. Such a difference in reality almost always occurs, inasmuch as the air of a room is protected from external current, and often has its temperature raised artificially by heating arrangements, and by the breath and bodies of the persons present in it. But even then, if there is only an opening, the tendency is for the counter-currents to meet in their passage, and to conflict, and therefore to a certain extent to obstruct each. Therefore, separate openings for the ingress and egress of air are desirable.

In providing separate openings for ventilation in our apartments, it is necessary, however, to guard against directing streams or currents of air directly upon the persons who are to occupy the rooms; and it is not always readily accomplished. One of the simplest methods, is by means of opposite air-flues, or flues opening into the same apartment, in opposite walls; the flue on one side giving vent to the spent air at the highest level the room affords, and that on the other side delivering fresh air at the same high level. Another, and still more simple plan recommended, consists in simply bisecting the air-tubes, or outlets, by which a current of air is desirable. The bisecting consists in the introduction of a second tube within the first, so as to allow space between the two. If a pipe, thus bisected, be arranged for the transmission of smoke, the smoke will be drawn up in a steady rapid stream on one or the other sides of the septum, and a downward current, more or less active, will be established on the other. "Smoky chimneys," says Dr. Corwan, the author of the plan, "for example, would be impossible, were these spaces properly subdivided; for no disproportion in the relative strength of either upward or downward currents would prevent their independent establishment. The short and ever smoking chimneys of small tenements and upper chambers might thus be made efficient." A patent ventilator, known as "McKennall's," much in use in Great Britain, is constructed on this system. "It consists mainly of air-tubes arranged concentrically, the inner discharging the vitiated air, while the fresh supply flows

down the outer tubes." This arrangement is said to produce an almost constant current, yet so gentle as to be scarcely perceptible.

In this country, the question of warming and ventilation are almost always interwoven and related to each other; for the temperature of the climate during the major part of the year necessitates artificial warming; and whenever we have a fire, we have a ventilator.

Setting aside trouble and expense, the use of air furnaces, combined with the use of open fireplaces, furnishes the most healthy, simple, and comfortable method of warming and ventilating a dwelling-house. The former supplies a mild and pleasant atmosphere to all parts of the house, while the latter, by the heat imparted to the chimney, establishes a current, which draws air from the air-heating apparatus, and from the apartments after it has done its work.

Stoves afford the least ventilation of all our modes of heating. They take little more air than is just sufficient to consume the fuel, and that is withdrawn from the lower part of the apartment, where the air is purer, instead of the upper part, where the heated products of respiration tend to accumulate. Wherever stoves are used, some provision should be made for the ingress of pure and the removal of bad air into the apartment; and it is not sufficient to depend on the imperfect interchange of air, which takes place when doors or windows are casually open, or through the chance crevices or wind-cracks of the partitions.

The air supplied to hot-air furnaces, ought always to be drawn by means of pipe or flue from the exterior of the dwelling; and should never be taken directly from a basement or cellar.

Each room, from fifteen to twenty feet square, for the accommodation of from six to ten individuals, should have an opening for the escape of foul air of, at least, one hundred square inches area. An ordinary sleeping apartment for two persons, should have an outlet of nearly the same dimensions. If the outlet communicate directly with the outer air, the rush of cold air inwardly may be obviated by making the communication terminate in a ventiduct, so arranged as to act exhaustively whenever the wind blows. An arrangement of this character, which has found favor in various parts of the country, is known as "*Emerson's Ejector.*"

But the best method for providing for the exit of air from an apartment is to have a flue, or passage, with a ventilating valve, opening into a heated chimney flue. A valve of this character, in extensive use, and working well, is known as "*Arnott's Self-Acting Suspension-Valve.*" It consists of a metallic flap, suspended in an opening, or flue, leading from the room to the chimney, and so balanced by a weight on an arm behind its hinge, that the slightest breath of air presses it back, while any reflex movement of the chimney current

effectually closes it. All noxious air, therefore, in an apartment, caused by the breathing of persons, the combustion of gas, or other bodies for lighting, etc., is allowed, at once, in obedience to the chimney draught, to pass away; but no air or smoke from the chimney can return. When no force intervenes, the weight on the valve causes it to settle in a closed position. A flap, thirty-six inches square, is large enough, where there is a good chimney draught, for a full sized sitting-room, with company. It is essential, however, for the successful working of this valve, that the chimney draught be uniform and good; so that no more air shall enter the chimney over the fire, than can escape at the chimney throat above. Where a room is warmed by a stove, or furnace, there is little probability of any obstacle of this kind existing.

A modification of Arnott's valve, consists of a square piece of wire gauze, set into an opening, with a flap of oiled silk suspended behind it. The current into the chimney pushes back the pendant flap, while a reverse current drives it against the wire, and thus closes the aperture against the admission of fumes or smoke. If the orifice in a chimney made for arranging this valve, be deemed unsightly, it may be concealed from view by placing a picture at a little distance before it. A plan recently suggested by Dr. J. H. Griscom, of New York, for the ventilation of dwellings and other edifices, is said to be most efficient and easily applicable. The agency depended on in this plan, is heat, but no extra expenditure of fuel is required; the heat used being only the waste heat of the furnace by which the house is warmed. "The arrangement consists in the construction of independent ventilating flues in the walls of the house, in proximity to the hot-air tubes, so that the two may be connected together by means of a lateral or branch tube, by which a current of hot air may, at any desired moment, be transmitted from the hot-air tube to the ventilating flue. By this means, the ventilating flues, which terminate in the open air, like an ordinary chimney, will be warmed by the hot air from the furnace, when the ordinary hot-air register is closed, as at night in a dwelling, or in a school-house, after school hours. If properly constructed, of brick or smooth stone, the walls of a flue will, after a current of hot air has passed through it a short time, become sufficiently heated to rarefy the air within, thus giving the flue a good ventilating power, even after the current of hot air has been withdrawn. For example, if the hot-air register of a parlor be closed at ten o'clock at night, and the heat, instead of being thrown back into the furnace, is allowed to pass into the ventilating flue, and so continue until six the next morning, it is evident that, during those eight hours, the interior of the ventilating flue must become thoroughly heated, so that the next day, when the current of hot air

is restored to the parlor, the heated sides of the ventilating flue will continue to rarefy the air within for many hours, and, perhaps, even days afterward. There being no danger of a reaction of the air of the flue through the ventilating register (as is the case when ventilating openings are made in ordinary fire-flues), connections with the apartment to be ventilated may be made at any point, and even carried to the opposite side of the house, between the beams of the ceiling, to ventilate distant apartments. Dr. Griscom's method has the advantage of being applicable to all edifices warmed by hot air furnaces of any description, which, in general, are those most needing ventilation. This arrangement may be introduced into many houses already erected, by connecting the hot-air tubes with such of the ordinary chimney flues as are not used with fire. One of the principal advantages appertaining to this plan, is the capability of having a *large number* of ventilating flues put in connection with the furnace. In fact, the number may correspond with the number of hot-air registers, and thus any desirable amount and extent of ventilation be obtained."

The use of stoves and furnaces, which emit their heat through and from *red-hot iron*, is considered by all authorities as highly objectionable. Air, thus acted upon, is spoken of as *burnt air*, and seems to be dead and flat; but the chemical or physical change evidently occasioned in it by contact with a hot surface of metal, has not as yet been satisfactorily explained.

The use of artificial lights, especially of gas light, may always be turned to a useful account for the purpose of ventilating dwellings and public edifices, by suspending over the burner a truncated cone of zinc, perforated near its upper part by a tube of zinc, which, in turn, is connected by its other extremity with a chimney flue, or the outer wall. The tube, by the action of the heat of the burner, becomes an efficient conductor for the air of the room, rendered impure by the processes of combustion or respiration. This mode of ventilation is particularly called for in small rooms, or shops, in which the air soon becomes contaminated, and exerts a noxious effect on those employed in them.

Cellars, from the circumstance that they are always liable to become sources and reservoirs of impure and offensive air, which ascends and permeates the upper apartments of the house, should always be thoroughly ventilated. One plan, recommended for this purpose, is to have an air-flue, or tube, lead from the celler directly to the top of the house, the termination being provided with an ejecting cap, or cover. Another plan is, to extend a flue, provided with a ventilating valve, from a chimney down into the cellar. Some authorities recommend the disuse of cellars altogether, and the construction of houses

entirely above the ground, with the lowest floor parallel with, or little above the surface of the earth.

On the Supply of Moisture to Air Artificially Heated. — The action of almost all the methods or arrangements in common use, for warming our apartments, is to parch and dry the air to a disagreeable and unwholesome degree. Yet, how to remedy the evil, and supply regularly to the heated air of our dwellings the exact quantity of moisture required, is a very difficult matter. Few persons are aware how much moisture must be added to cold air, introduced from without, and suddenly heated in a stove or furnace, to impart to it soft and agreeable qualities. (For the amount of moisture absorbed by air at different temperatures, see chapter on Water.) The usual plan adopted, is to have on the stove, or in the furnace, a reservoir, or pan of water, fixed advantageously for evaporating. This, although it is almost always insufficient, should never be neglected ; and the aim should be, to make the evaporating surface exposed to heat as large as possible. Another plan recommended, is to have an endless towel in the apartment, hung upon a roller, with its lower part dipping into a trough of water beneath. By turning this from time to time, a large wet surface may be kept constantly exposed for evaporation.

Defect of Light. — Next to the seemingly apparent determination to exclude fresh air from the habitations of man, is the equally apparent determination to prevent full access of light to the human body. Plants and vegetables, it is well known, when grown in dark places (as cellars, for example), are invariably bleached and sickly; and the vital activity of all vegetation, when screened from direct sun light, is always diminished. Now, the effect of the deprivation of light on the animal system, is, in all respects, similar and analogous ; and so important is a full supply of light to the maintenance of human health, that a distinguished sanitary authority has recently proposed, that it should be made, by law, a penal offense to deprive a neighboring dwelling of light. A few facts will serve to illustrate the truth of the above proposition:

When the eggs of a frog are put in water, in a vase with opaque sides and top, so as to exclude the light, they evince no change; whereas, eggs, in water of the same quantity and temperature, exposed to the light, undergo a gradual development, and produce, in due time, young tadpoles. If equal numbers of silk-worms are exposed in a light room and a dark room, many more larvæ will be hatched from the former than from the latter. It has also been observed that persons living habitually in underground apartments, and in narrow alleys and deep courts, where access of the sun light is almost entirely prevented, are very apt to produce deformed and scrofulous children ; and workers in mines are also liable to deformi-

ties and disease, beyond what can be accounted for by the other elements of their condition. Sir Andrew Wylie, for many years physician to the Emperors Alexander and Nicholas, of Russia, noticed, and published, the following curious fact: that in a certain barrack at St. Petersburg, the mortality on the dark side — that from which the sun light was always excluded — was two hundred per cent. greater than that on the side where the sun shone and penetrated into the windows and doors of the apartments. It has also been frequently observed in cities, during the prevalence of epidemic diseases, that the sickness and mortality was greatest on the sides of the streets that were, for the major part of the day, deprived of direct sun light. The apartments of a dwelling-house most constantly in use by the inmates, ought always to be those to which the direct rays of the sun have the most free access.

WATER, IN ITS RELATIONS TO DOMESTIC AND SANITARY ECONOMY.

Importance of an Abundant Supply of Good Water. — Of the vast importance of an ample supply of water for family use, an impression may perhaps be best formed by imagining the horrors of a drought, in contrast with the comforts of an abundance of water furnished unstintedly; and it has been asserted by an eminent medical and sanitary writer, "that the measure of the comfort and health of a people, or even of a single household, may be judged by the approach to one or the other of these extremes, of the water afforded to and used by them." It has been noticed in London, Paris, and other great cities of Europe, where dwellings rise to the hight of five or six stories, up which it is impossible, by hand labor, to carry an ample supply of water, that suffering and sickness from the deficiency of water, are marked and decided; while nearer the ground the inhabitants, who are better able to observe rules of cleanliness, and to use water more freely in every way, are, on this account, less prone to evils of many kinds.

In a report to the British Parliament, some years since, of a commission appointed to inquire into the health of English towns, the commissioners thus speak of the influence of an imperfect water supply upon the moral and physical welfare of manufacturing communities: "*Difficulty and labor in obtaining water, after a hard day's work, has a great effect on the economy, habits and health of the inhabitants of towns and cities; obstacles to the maintenance of domestic or personal cleanliness, soon produce habits of personal carelessness, which rapidly lower both the moral and physical condition of a whole population.*"

"If any doubt," says a late sanitary writer, "that simple cleanliness (which is unquestionably promoted by easy access to an abundant water supply), has an important influence on health, let them bear in mind the fact, that even a washed hog will fatten more than a dirty one in the proportion of five to three; and when such is the effect upon an organization which instinctively returns to wallowing in the mire, what may reasonably be expected of its importance to those in whom cleanliness is second only to godliness!"

Sources of Water. — The great and immediate source of water is the ocean, which collects all the water from the earth. Ocean, or sea-water, however, contains so large a quantity of common salt and other mineral substances, that it is rendered unfit for drinking, culinary, or washing purposes. The saltiness of the ocean is commonly attributed to the presence of vast beds of mineral salts at its bottom; but this is an error, for the sea undoubtedly owes all its salts to washings from the land. The streams that have flowed into it for ages, have been constantly bringing soluble mineral matters from the land, and as pure water alone evaporates from the surface of the ocean, the quantity of such matter has been continually accumulating, until the whole ocean has acquired its present briny and bitter condition. The evidence on this point is conclusive; and the saline condition of sea-water is but an exaggeration of that of all ordinary lakes, rivers and springs. These all contain more or less of the mineral constituents of sea-water, but as their waters are continually changing and flowing into the sea, the salts in them do not accumulate. Again, every lake into which rivers flow, and from which there is no outlet, except by evaporation, is a salt lake; and it is extremely curious to observe that this condition disappears when an artificial outlet is provided. Examples of such lakes are the Dead Sea, the Caspian, the Sea of Aral, and the Great Salt Lake of Utah; the saltiness of all of which greatly exceeds that of the ocean.

The atmosphere, resting upon the ocean like a sponge, absorbs water from its surface, in a perfectly pure condition; and, as vapor, carries it from the equator to the arctic and antarctic regions; thus distributing it over the earth, north and south. The quantity of actual moisture, raised in the shape of vapor, from the surface of the ocean, is estimated to amount to no less than 60,000 cubic miles annually, or nearly 164 cubic miles per day. In the tropics, where the temperature of the atmosphere is very elevated, evaporation from the surface of the ocean goes on with wonderful rapidity.* In the

* Air absorbs moisture at all temperatures, but the capacity of air for moisture increases rapidly with its elevation of temperature. A volume of air at 32° can absorb an amount of moisture equal to the hundred and sixtieth part of its own weight, and for every 27 additional degrees of heat, the quantity of water it can absorb at 32° is doubled. Thus

vicinity of Calcutta, the evaporation from the sea is estimated at fifteen feet annually; between the Cape of Good Hope and Calcutta, it has been found during the months of October and November, to average nearly three-quarters of an inch daily; betwixt 40° S. L. and 20° in the Bay of Bengal, it exceeds an inch daily.

When air, highly saturated with moisture from continued evaporation, has its temperature from any cause suddenly reduced, its capacity to retain moisture is diminished, and like a sponge filled with water and compressed, the atmosphere pours out the water which its diminished capacity can not hold, in the form of rain, hail, snow or dew. The moisture thus precipitated upon the surface of the earth forms springs, brooks and rivers, and re-enters the ocean. "*All the rivers run into the sea, yet the sea is not full: unto the place whence the rivers come, thither they return again.*"

When atmospheric moisture is precipitated upon the surface of the earth, it sinks downward through the loose and porous soil, or rock, until it reaches a bed of clay, or rock impermeable to water. Here, it either accumulates and saturates the soil, or else running along the surface of the impervious stratum, it bursts out at some point where such impervious bed or stratum comes to the surface, in consequence of a valley or depression. In such a case, the flow of water constitutes a *spring*.

If, however, there are no irregularities in the surface of the impervious strata, so situated, as to allow a spring to burst forth, the water soaking downward, will not drain off, but will accumulate, and rise among the particles of soil, as it would among shot or bullets in a water-tight vessel. If now, a hole or pit be dug into such earth, reaching below the level of the water accumulated in it, it will soon be filled up with water to this level, and will constitute a *well*. The reason why some wells are deeper than others, is, that the distance of the impervious stratum below the surface is different in different localities.

In cases, where from the nature and conformation of the surface water can not be obtained from wells and springs, or the water furnished by them is bad, an abundant supply can generally be obtained from the heavens, which, with well constructed cisterns, filters, and ice, leave little to be desired, so far as domestic purposes are concerned. "Taking the annual rain-fall at 36 inches, we have 3 cubic feet of water falling upon a square foot of surface in a year. A cubic foot contains $6\frac{1}{2}$ gallons, so that we get $18\frac{3}{4}$ gallons upon each surface foot

a body of air at 32° F. absorbs the 160th part of its own weight; at 59° F., the 80th; at 86° F., the 40th; at 113° F., the 20th part of its own weight in moisture. It follows from this that while the temperature of the air advances in an arithmetical series, its capacity for moisture is accelerated in a geometrical series.

annually. A house 25 by 40 has a thousand feet of surface, and collects nearly 19,000 gallons of water annually, which, if stored in cisterns of sufficient capacity, will furnish more than 50 gallons per day, throughout the year."

The following is an estimate of the average consumption of water, per head, in some of the chief cities, including not only what is drunk, but what is consumed *per diem* in domestic and manufacturing purposes; also for baths, stables, gardens, washing the streets, extinguishing fires, &c. By an inhabitant of Paris, 2½ gallons; of London, 20; of Philadelphia, 30; of New York, 40; of Boston, 43; of Edinburg, 19; of Glasgow, 27; of Vienna, Constantinople, and Montpelier, in France, 15; in all France, 5 gallons.

Purity of Water. — In nature, water is never found perfectly pure. Rain-water collected in the country after a long continuance of wet weather, is the purest natural water, but even this always contains atmospheric air, and the gases floating about in it, to the extent of about 2½ cubic inches of air in 100 of water. The use of rain-water is also liable to the objection, that, where it runs down the sides of houses into cisterns, it always becomes contaminated to a certain extent with impurities, as soot, dust, etc.

After rain-water, in the order of purity, comes river-water; next the water of lakes and ponds; next ordinary spring waters; and then the waters of mineral springs. Succeeding these are the waters of great arms of the ocean into which large rivers discharge their volumes, as the Black Sea, the water of which is only brackish; then the waters of the main ocean; then those of the Mediterranean and other inland seas; and last of all, the waters of those lakes which have no outlets, as the Dead Sea, Caspian, Great Salt Lake of Utah, etc.

Spring-water, although it may be perfectly transparent, always contains more or less of mineral matters dissolved in it. The nature of these substances, will, of course, vary with the character of the soil through which the water percolates. The most usual impurities are *carbonate of lime*, *common salt*, *sulphate of lime* (*gypsum*), *sulphate and carbonate of magnesia*, *and compounds of iron*. Most spring-waters also contain a proportion of carbonic acid gas, which not unfrequently ranges from 12 to 20 cubic inches to the gallon.

When the waters of springs retain in solution so large a proportion of mineral matter, as to give them a decided taste, they are termed Mineral Waters, and are usually reputed to have some medicinal quality, varying with the nature of the substance in solution.

Waters which contain iron, in quantity sufficient to impart to them an *inky* taste, are termed *chalybeate*. The iron exists most frequently in the state of a carbonate — *i. e.* united to carbonic acid — and rarely in a proportion exceeding one grain in a pound of water.

Waters impregnated with sulphureted hydrogen, are termed *sulphurous*, or *sulphureted*. They may be readily recognized by their nauseous taste and smell. Remarkable springs of this kind exist at Sharon, N. J., and also in Virginia and Kentucky. Sulphureted hydrogen is not contained in waters ordinarily drunk, and appears to be formed under two circumstances; first, it occurs apparently through the decomposition of sulphides, which exist in the rocks through which the water flows; in the next place, it exists in waters where animal and vegetable matters are allowed to remain in contact with the salts called sulphates. Some spring waters contain larger quantities of sulphureted hydrogen than our foulest sewer-waters, and yet are drunk medicinally and with impunity.

Springs, whose waters contain a large proportion of earthy, or alkaline salt, are called *saline* — though the term is generally applied to particularly designate springs containing common salt.

Relative Fitness of Waters for Use. — One can hardly overrate the importance of a full supply of pure water, to meet the requirements of health, whether we look to the individual, or to the congregated numbers in cities and populous districts. Water, in an average state of purity, is indispensable for digestion, and the elaboration of good blood; as, on the contrary, if it be hard, and contaminated with animal and vegetable matter, it perpetually disorders digestion, and gives rise to the innumerable secondary affections of the kidneys, skin, and nervous system, and an impairment of bodily strength and activity. It is important, therefore, to discuss briefly, in this connection, the relative fitness of various waters for use.

It has been already stated, water, in nature, is never perfectly pure. It is, perhaps, hardly correct, however, to designate the small quantities of mineral matter, which are always present in ordinary drinkable waters, as impurities, inasmuch as they have never been proved, when existing in minimum or average proportions, to do harm. It is only when their quantity rises above a certain standard that they can be regarded as injurious. The human blood, in its normal condition, contains 420 grains of mineral matter to the gallon; yet, if a physiologist were to say, that this quantity was an impurity, he would be laughed at for his assertion. If the quantity of mineral matter in the blood exceeds, however, 420 grains to the gallon, then it would most certainly be regarded as an impurity, and would prove injurious.

Any water which contains less than *fifteen* grains of ordinary *mineral* matter in a gallon, is considered as comparatively pure, and may be employed for all domestic purposes, provided it does not contain too large a proportion of organic matter.

Spring-waters which issue from, and flow over, granite, or other

hard rocks of like character, are generally remarkable for their purity A noticeable water of this character is that of the river Loka, in Sweden, which flows mainly over granitic rocks, and contains only 1-20th of a grain (0.0566) of solid mineral matter in a gallon, weighing 70,000 grains. Such instances are, however, very rare; but water containing as little as 4 or 5 grains of solid matter to the gallon, are not unfrequent. The average of mineral waters per gallon, in the well and spring waters generally used for domestic purposes, ranges from 10 to 30 grains. Water, of which a gallon contains 60 grains of ordinary mineral matter, may still be good for drinking; but it is not fit for cooking vegetables or washing linen, when it contains 8 grains to the gallon, of either lime or magnesia. The water of the celebrated Congress spring, at Saratoga, contains 611 grains of mineral matter to the gallon, and the water of the ocean, 2,500 grains.*

The following is a ready method of estimating approximatively the quantity of mineral matters contained in water: Take a measured quantity of water and boil it in an evaporating basin; the water will at last entirely disappear, and the inorganic matters will be left at the bottom of the vessel. By taking two or three waters, and thus treating them, we can judge, within a little, of their relative purity. We may judge also, to some extent, of the quantity of organic matters present in water; for, according as these are present, the precipitate left after evaporating will be of a dark and dirty color.

The most universal and important mineral substance occurring in spring, well and river waters, is lime. This mineral exists in almost all soils in combination with carbonic acid, as carbonate of lime, or common limestone; and it is also very common in the form of sulphate of lime, (lime in combination with sulphuric acid,) which is also known as gypsum, or "plaster of Paris." Pure water dissolves carbonate of lime to a very slight extent only; but water containing carbonic acid (and nearly all spring waters, as has been already stated, contain this gas,) dissolves it freely, in proportion to the amount of the gas present. Thus it has been found that one gallon (70,000 grains) of *pure water* will not dissolve more than two grains of carbonate of lime; but by the addition of carbonic acid, it acquires the power of dissolving ten, twenty, or sixty grains, as the case may be.

Waters which contain much lime, are often bright and sparkling to the eye, and agreeably sweet to the taste. They are also known as hard waters, from their property of curdling soap. When waters containing lime held in solution by carbonic acid are boiled, the car-

* The following are the average quantities of mineral matter found, by analysis, to exist in some of the waters extensively used in the United States for drinking and domestic purposes: Croton water of New York city, 6·6 grains per gallon; Brooklyn water, 2·6 do.; Cochituate, Boston, 1·2 do.; Schuylkill, Philadelphia, 4·2 do.; Delaware river, 3·5 do

bonic acid is gradually driven off by the heat, the carbonate of lime falls or precipitates, and the water becomes softened. This is the source of the white *fur scale*, or incrustation, which gradually accumulates upon the inside of kettles, or boilers, in lime districts.

The presence of carbonate of lime, thus dissolved in water by the agency of carbonic acid, may be easily detected by the addition of lime water, (slacked lime dissolved in water). The lime unites with the carbonic acid, which holds the carbonate of lime in solution, and forms with it a fresh portion of carbonate of lime; and as this salt is nearly insoluble, it falls down in the form of a white powder; and not only the carbonate of lime that is formed, but that which was previously held in solution, is deposited also; and thus the water loses all its carbonate of lime. The objection to this plan for practically removing lime from water to be used for drinking purposes is, that there is likely to be an excess of the slacked or caustic lime used, the presence of which renders the water disagreeable and corrosive. For washing waters, and, indeed, for most culinary purposes, the plan is unobjectionable.

The presence of sulphate of lime in water may be detected by adding to the water a few drops of *nitrate of baryta*. The sulphuric acid in combination with the lime leaves it to unite with the *baryta*, and forms a white, insoluble precipitate. Water rendered hard by the presence of sulphate of lime, may be softened by the addition of potash, or soda.

The use of waters impregnated with lime for drinking, is generally supposed to have a tendency to produce derangement of the digestive, absorbent and secretory organs, resulting in various forms of disease, as Dyspepsia, Constipation, and Urinary Calculi. Such effects are experienced more especially by persons previously unaccustomed to the use of such waters; as in the case of those removing from the granite soils of New England to the limestone regions of the Western States. It has also been observed of the Cholera, that while it rarely, if ever, visits granitic districts, its most terrible ravages have occurred in regions underlaid by limestone, and where the waters are of necessity abundantly impregnated with lime. Mr. Youatt, in his well-known work on the "Horse," observes "that hard (lime) water, drawn fresh from a well, will assuredly make the coat of a horse, *unaccustomed to it*, *stare*, and it will not unfrequently gripe and otherwise injure him. Instinct, or experience, has made even the horse himself conscious of this; for he will never drink hard water if he has access to soft; but will leave the most transparent water of a well for a river (although the water may be turbid,) and even for the muddiest pool." On the other hand, some authorities consider waters containing a moderate proportion of saline matters, especially

of salts of lime, as preferable for drinking purposes, on the ground that they furnish, in a degree, the mineral food required by the osseous system and the blood; and of which it is alleged that the supply afforded by solid foods alone, is not in all cases sufficient. An opinion has also been advanced, that the low conditions of vitality frequently manifested in the inhabitants of the Swiss valleys, is, in a great degree, due to the extreme purity of the waters drank; these being derived from streams fed by melting snows, which flow over granitic rocks.

The presence of magnesia, in any considerable quantity, in drinkable waters, is undoubtedly very injurious, and in Switzerland is supposed to give rise to the frightful diseases known as "*Goitre*" and "*Cretinism.*" *

Chloride of sodium (common salt,) and oxyd of iron, are almost always constituents of spring and river waters. Their presence in small quantities can not, however, be considered objectionable.

The quality of "freshness," or "briskness," of water, which is necessary to render it really drinkable, is due to, and increases with, the amount of air and other gases (especially carbonic acid) held in the water. The quantity of these gases absorbed by water, varies with its temperature, and also with the pressure of the atmosphere—cold water dissolving and retaining a larger proportion than warm or tepid water. Where cold waters from springs or fountains are exposed to warm air, they become elevated in temperature, and the gases contained in them escape, rendering the water flat and insipid. Waters highly charged with carbonic acid gas, actually sparkle when agitated, like Champagne wines, and from the same cause. For drinking purposes, no water can have too much of the gases, unless of sulphureted hydrogen, the offensive odor of which is sufficient to exclude it from common use.

Most of the beverage sold as soda water is improperly named; it should rather be called effervescing water, for it has not a particle

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* In regard to the influence of lime and magnesia in drinking waters on the physical system, a recent writer on this subject, Dr. W. P. Seymour, of Troy, N. Y., makes the following sensible remarks: "It is, perhaps, not easy, in the experience of individuals, to show that the presence of lime or magnesia in drinking waters is the direct occasion of disease; but as water contributes to most of the transformations which occur within the body, it is reasonable to suppose that any constituent which interferes with its solvent power, will modify materially its effect, not only in the processes of digestion, but in the more subtile and equally important metamorphoses which are constantly taking place, by its aid, in every living tissue." Experience also establishes the correctness of these views. It is well known to medical men that Stone and Gravel are vastly more common in limestone regions of the West, than in other sections of our country where softer waters abound; and it is even apparent to the ordinary observer, that persons in whom Affections of the Kidneys are once established, are remarkably sensitive to the difference which exists between waters in this single element of hardness.

of soda in it; it is merely water with carbonic acid forced into it by using mechanical pressure, as that of a condensing syringe, or a powerful force pump. The water, by this treatment, will effervesce violently when poured out; have a brisk, agreeable, acerb taste; and, although in other respects an acid, is not sour. If a little soda had been dissolved in the water previously to its impregnation, the result would be pure soda water.

Waters containing any considerable proportion of organic matter, are considered unwholesome, and should be carefully avoided. The best authorities lay it down as a rule, that waters containing *six* grains of organic matter to the gallon, are not fit for any domestic use; if this limit is exceeded, they act disastrously upon the animal economy.

The organic constituents of water are of two kinds: living and dead. The latter are by far the most objectionable. "In almost all waters of lakes, ponds, and rivers, living creatures of a *sensible size*, as fish, frogs, shell-fish, slugs, worms, etc., are to be found; and some of these also in the water of certain wells and springs. Although these animals impart their secretions to the water in which they live, yet these are either simply saline, entering like other saline substances into solution in the water, and no more hurtful, or so far as they are organic, they are in a condition in which they rapidly decompose into the simplest and equally innoxious compounds. The creatures referred to, moreover, by subsisting on those smaller than themselves, and by, in many instances, consuming animal and vegetable matters in the earlier stages of decay in the water, unquestionably preserve it in a purer state than it would otherwise possess. Thus, the popular opinion respecting the advantage of having frogs or fish in wells and springs, is correct; and on a larger scale, though far less effectually in the comparison, the creatures named contribute to the purity of lakes and streams." But in addition to the living organisms of sensible size, above named, which are found in most river waters, and in many lakes, wells, and springs, there are others, so minute as to be often invisible to the naked eye, such as animalculæ, and microscopic algæ, or water plants. Many of these minute forms of animal and vegetable life, are probably no more injurious, so far as the quality of the water in which they live is concerned, than the organisms of sensible size before named; but there is this significant and important remark to be made concerning them, and that is, that they are the most numerous where there is the greatest amount of impurity, and are a measure of the greater or less objectionable nature of a water for drinking purposes; so that, although the living microscopic creatures may not themselves be injurious, the water they live in most probably is.

Waters containing minute, plant-like bodies, resembling flocculi,

or filamentous bits, or shreds of textile substances, are accounted dangerous — the organisms in question being often half-developed forms of some low fungus. In 1854, when the Cholera visited London, the mortality among the inhabitants of a limited district of this city, who used water from a particular pump, was excessive; some five hundred dying in a single week. The water afforded by this pump when examined by order of the authorities, showed nothing remarkable but the filament above named; but these filaments were also showed to be similar to the flocculent fungi which exist in almost all sewer-water; and further subsequent investigation revealed the fact, that the well supplying the pump in question, had been for some time in partial communication with the cess-pool of an adjoining house.

Dead organic matter existing in water is of two kinds. It is either in the form of disintegrated insoluble matter, or it is dissolved in the water. The first you can discover with the aid of the microscope. Thus, if you examine a portion of sewer-water, you will find that it abounds with portions of dead animals and plants. These organic substances, then, can not be affirmed to be specifically injurious (neither are they injurious when entirely decomposed, and have entered into new compounds); but it is while they are in a state of change that they act injuriously. They then act as *ferments*, and communicate the state they are in (*i. e.* of decomposition) to other bodies with which they come in contact.

When the organic matters are dissolved in the water, they can not be found with the microscope, and their detection is a matter of some difficulty. The chemist estimates them by the quantity of nitrogen which he obtains from the deposit of water which has been evaporated; but this method is only practicable to the expert. A very good rough test for ascertaining the presence of this dissolved matter, is the *permanganates of potash and soda.* Permanganic acid and the permanganates contain large quantities of oxygen; and when they are brought in contact with organic matters, they lose their oxygen and become changed in color. If you take permanganate of soda, which is sold by druggists under the name of "*Condy's Disinfecting Fluid*," and put it into pure water, it produces, first, a deep violet, and afterward, a beautiful permanent red color. If the water, however, contains organic matters, the red color soon disappears; and, in proportion to the quantity of organic matter, will be its discolorizing agency. Now, if you take a series of waters of different degrees of impurity, you will find that the water which has the least organic impurity retains the most color. As a simple rule, reject the use of a water which, on mixture, discharges the color to any considerable extent from permanganate of potash or soda.

Organic matters, in waters, derived from decaying animal sub-

stances, are much more injurious than those derived from decaying vegetable substances. Because a water is clear, cool, and sparkling, it by no means follows that it is the most suitable for drinking. In fact, these very qualities render such a water liable to suspicion; especially if it be drawn from a well in a city, or populous town. The sparkling, in a great degree, arises from the carbonic acid gas contained in it; and in many cases, this carbonic acid is derived from the decomposition of animal or vegetable matter. Its cooling taste may also be indicative of an impure origin, as it often arises from the formation of salts, which are only derived from the decomposition of organic matter. The presence of salts known as nitrates* in a water, especially impart to it a cooling, grateful flavor; but the presence of these salts is also a most certain indication that the water is impure, and contaminated with effete animal matter. In Great Britain, it has been frequently noticed, that the most popular waters of towns and cities are those drawn from wells sunk in the vicinity of old and crowded church yards; the coolness and "sparkle" which renders them popular, being due to the nitrates and carbonic acid derived from the remains of decayed humanity. From this kind of impurity the water of deep wells, and especially of wells cut into rocky strata, are generally entirely free. They frequently contain mineral matters in abundance. They do not contain organic matters. Hence water derived from such sources, is preferable for drinking purposes, to waters drawn from sources near the surface of the earth.

Of all waters, those of stagnant pools and of marshes most abound in foreign and deleterious materials, especially those of an animal and vegetable origin. They commonly retain and emit mephitic gases, and are to be regarded as always extremely unwholesome. "In the way of rendering marshy waters less unwholesome, the substitution of an active for an effete vegetation is advantageous, as diminishing both the decaying matters and the noxious gases; and the growth in them of plants of a bitter and astringent kind, as boy-bean and tormentil, is said greatly to lessen the tendency to diseases in cattle drinking their waters."

River waters are, in popular estimation, generally considered impure; but it should be kept in mind, that very many of the impurities of such waters are purely of a mechanical nature — such as particles of earth and sand washed from the land — which have nothing to do with the chemical constitution of the water, and are easily separated by the simplest form of filtration. River-waters, however, which receive the sewerage of large towns or cities, and the drainings

*The nitrates consist of nitric acid (aquafortis), combined with lime, magnesia, etc. Saltpeter is nitrate of potash, consisting of nitric acid combined with potash.

of large manufactories, as print-works, dyeing establishments, etc., should always be avoided for domestic purposes.

Purification of Waters.—Various methods have been adopted to correct the impurities in waters, intended for drinking and domestic purposes. Water in evaporating, leaves its impurities behind. Steam condensed produces distilled water, or water in its purest state. A tube of copper, glass, or gutta-percha, connected with the spout of a tea-kettle, and surrounded by cloths kept saturated with cold water, affords a rude but convenient method of preparing distilled water. Such water is not, however, palatable for drinking, until it has been allowed to reabsorb the air which has been expelled from it, by the action of the heat in distilling.

Water, in freezing, tends to separate completely from every thing which it previously held in solution. Even the air contained in water, is expelled in the act of freezing, and, becoming entangled in the thickening fluid, gives rise to the minute bubbles generally observed in blocks of ice. For a like reason, the ice formed by the freezing of sea-water, is, under all ordinary circumstances, fresh, and entirely destitute of salt.

When rain-water, drawn from cisterns, is to be employed for drinking and culinary purposes (and by many it is preferred to all other waters for these purposes), the first rain which falls, and which contains the washings of the roof, should always be allowed to run to waste; a method by which the deterioration of the water afterward caught is almost wholly avoided.

The foreign substances contained in water, and which are regarded as rendering it impure, may be divided into two classes, viz.: those mechanically suspended in the water, as finely divided earthy matters and minute particles of animal and vegetable substances; and secondly, various dissolved substances, which contaminate the water, notwithstanding it may be clear to the eye, and seem perfectly pure. The first-named substances — those mechanically suspended in the water — may be, for the most part, easily and cheaply removed by filtration through sand, gravel, or charcoal. The two first may be said to be the great natural filtering media; the freedom of water, gushing out from beds of clear sand and gravel, from all mechanical impurities, being proverbial. A most simple arrangement for artificially taking advantage of the filtering properties of sand and gravel, may be constructed as follows: Divide a cistern, or tank, of any convenient size, into two compartments, by a partition which does not quite reach the bottom; substituting a strip of coarse cloth, or flannel, for the intervening space between the bottom of the partition and the bottom of the tank; then fill up one of the compartments with layers of sand of different degrees of coarseness, the finest being

at the bottom. When water is admitted, or allowed to flow slowly into this latter compartment, it trickles through the layers of sand, has its impurities strained from it, and rises clear in the other compartment. After a time, the sand gets clogged with sediments, and needs to be removed.

Some consider it an advantage, in filtering, to compel the water to ascend through the media, rather than descend; inasmuch as the weight of the impurities tends to oppose their ascent, and they are, therefore, more likely to be left behind. The principle of such an arrangement is represented by a tank, in which the first partition does not quite reach to the bottom. The middle division has a perforated bottom of wood, or metal, above which is placed a coarse cloth, then a layer of sand, to be succeeded (if deemed desirable) by a layer of powdered charcoal; the media being kept in position by a perforated board or sheet-iron plate. In the partition above the filter, is an aperture through which the filtered water passes into another compartment, from whence it can be drawn off by a faucet. But the principle of filtration is so simple, that any vessel can be adopted for the purification of water, tall ones being preferable to shallow. Beside sand, porous stone, powdered glass, flannel cloths, sponge, etc., can be used as filtering media. But by far the best substances that can be used for filtration, are charcoal — *i. e.*, powdered wood char coal; powdered coke; and animal charcoal (derived from burnt bones); the latter being by far the most effective agent. Sand and like substances do little more for the purification of water filtered through them, than to strain out mechanical impurities; but charcoal does not only this, but also removes coloring matters, organic substances, offensive gases, and, to a certain extent, mineral salts held in solution in the water. The foulest sewer, or stagnant water filtered through a moderately thick layer of charcoal, comes out sweet, clear and bright. Animal charcoal, moreover, filters about three times and a half more rapidly than sand, or other similar substances.

When the impurities of water are in a state of solution, their removal is a matter of no little difficulty; filtration, except through animal charcoal, removing but a small percentage of them. Boiling the water, destroys animal and vegetable matter, and, consequently, all taste and odor dependent on this cause; it also precipitates some of the mineral matters which are held in solution in the water, by the presence of carbonic acid. Boiling the water, however, by expelling the air and gases contained in it, renders it exceedingly flat and unpalatable. Water, contaminated with animal and vegetable matter in considerable quantity, is endowed with the power of self-purification. The action of the oxygen of the air generates a species of fer-

mentation, whereby the organic matters contained in the water become oxydated, deprived of both odor and color, and precipitated in part as sediment. The water of the river Thames, contaminated with the sewerage of London, is a remarkable illustration of this fact; taken on board ship, it is at first nauseous, but after standing in casks for a few days, it becomes sweet and wholesome. To drink water, however, of this character, while undergoing the described fermentation, is considered highly dangerous. The following way of purifying water containing organic matters, has recently been patented in England, and is said to be very efficacious. It consists in suspending in a tank or reservoir containing this water, iron wire, of about one-sixteenth of an inch in diameter, loosely packed in bundles or coils, in the proportion of about one pound weight of such wire to every one hundred gallons of water. The water is allowed to remain in contact with the iron from twenty-four to forty-eight hours, according to the rapidity with which the precipitation of organic matter occasioned by such contact takes place; and is then filtered through sand, or any other convenient media. The quantity of organic matter in water is always greatest in summer, and disappears for the most part when the temperature of the water sinks to the freezing point.

Water in Leaden Pipes and Cisterns. — One of the most dangerous of the impurities, liable to occur in waters used for drinking and culinary purposes, is *lead*, derived from the leaden pipes or reservoirs commonly used for transmitting or storing water. The action of different waters on lead, varies considerably. A water may act upon lead and corrode it, without becoming itself actively poisonous, if the compound formed be *insoluble;* but if the compound formed by the corrosion passes into solution, then the water containing it becomes poisonous. When ordinary water is placed in contact with lead, the free oxygen it contains combines with the metal and forms hydrated oxyd of lead, which is nearly insoluble. There is also, as has been before stated, in most waters, more or less of carbonic acid, which in turn combines with the oxyd of lead and forms carbonate of lead, which is also insoluble. But, if there be in the water an excess of carbonic acid, then a bicarbonate of lead is formed, which is very soluble, and therefore passes into solution in the water. The following waters may be considered as especially liable to act on lead: 1st. Waters which are very pure, and at the same time highly aerated — that is, highly charged with air and carbonic acid. 2d. Waters which contain nitrates (nitrate of potash or saltpeter; nitrate of soda; nitrate of lime, etc.); chlorides (as common salt, the chloride of sodium); or organic matter, as those flowing from the vicinity of barn-yards, manure heaps, or from swamps and fields, all dissolve

lead from the pipes through which they pass; and the constant use of such waters, in the process of time, will introduce sufficient lead into the system to produce disease. Waters, on the other hand, which contain the salt known as sulphates (*i. e.* sulphate of lime or gypsum,) and phosphates, are believed to exert but comparatively little action on lead; as in these cases a film of insoluble sulphate or phosphate of lead forms after a little time upon the surface of the pipe, which prevents all further corrosion.

So general, however, is the action of water upon lead, that it is rare to find any water that has been kept in contact with the metal for a considerable period, which does not contain some traces of it; and nearly all scientific men and physicians, who have given much attention to the subject, unite in recommending the entire disuse of lead for any purpose connected with the service of water. Dr. Dana, of Lowell, Mass., recommends as substitutes for leaden pipes in the conveying of water: "1st. Wood, wherever it can be used; 2d. Cast-iron, or wrought-iron tubes; 3d. Copper, protected by lining of *pure* tin. The use of all other metals, or alloys of these, in the present state of our knowledge and experience on these subjects, ought forthwith to be abandoned." In all cases where the use of water conveyed through leaden pipes, can not be well avoided, especial care should be taken to empty the pipes of the water which has been for some time retained in them.

To remove lead from water, Prof. Faraday recommends "the practice of stirring up animal charcoal with the water so contaminated, the same being then allowed to settle."

The use of waters containing lead is the more dangerous, from the circumstance, that the action of the poison is very deceptive and not often immediate; the lead accumulating in the system without the knowledge of the individual; and producing, often after the lapse of years, a number of different and distressing forms of disease, such as Colic, Paralysis, etc. Within the last few years, Rheumatic and Neuralgic Affections have become very frequent in the United States; and it is the opinion of some celebrated physicians, that lead is often the incipient, or immediate cause of them.

Effects of Bad Water for Drink.— When water — our natural beverage — is impure, it proves to be a cause of protracted ailments in ordinary seasons; and in those of epidemic visitations, it acts as a directly exciting cause of disease and death. In marshy regions, in which periodical Fevers abound, water is deemed by some, on good evidence, to be as actively a contributing cause, as bad air itself. But, its malignancy has been particularly conspicuous in the production of Cholera; and some examples illustrative of the fact, will, we

think, prove not only interesting to our readers, but may serve to enforce the caution which has already been given.

During the visitation of the city of London, in 1854, by the Cholera there were large districts of the city, through which were distributed two different qualities of water, supplied by two independent and distinct companies; so that one large section of the population, numbering about 268,000 persons, drank an impure water; while another section, numbering about 166,000 persons, used a clearer and comparatively pure water. In all other respects, these two populations (being intermixed in the same districts, and even in the same streets of these districts,) were living under precisely similar sanitary and social circumstances; breathing the same atmosphere, having the same employment, and averaging the same habits of life. In short, they were placed in circumstances nearly identical, saving the difference in the source whence they obtained their water for drink. Now, at the close of the epidemic, an accurate inquiry, instituted by the Government Board of Health, showed that the mortality among the drinkers of the impure water, was at the rate of 130 to every 10,000; while that of the drinkers of the purer water, was only at the rate of 37 to every 10,000.

Another instance of remarkable contrast occurred in the city of Oxford, England, in respect to two jails, or prisons — the city and the county — the two buildings being in proximity to each other, and under essentially the same conditions. The inmates of the former entirely escaped the Cholera in 1854, while those in the latter were severely afflicted. On examination, it was found that the only apparent difference between the two institutions consisted in this: that in the county jail, the water, of which the soup supplied to the prisoners was made, was pumped from a well within ten feet of one of the prison drains; and when this fact was ascertained, and the supply of water from the old source was discontinued, then the Cholera and Diarrhea almost immediately ceased. Prof. Palmer, of Chicago, in commenting on a fearful visitation of the city of Sandusky, Ohio, by the Cholera, says: "The city is situated on a clay soil, underlaid by a limestone, and is supplied with water mostly from wells, dug in this tenacious clay. This water is not only charged with lime and other earthy salts, but likewise contains large quantities of decaying organic matter, derived from surface drainage. I am fully of the opinion, that the fearful ravages of Cholera in this city may be, in a great measure, attributed to the use of impure water." "It is also a well established fact, that, in the city of Cincinnati, of all persons who used the water of certain springs on the surrounding limestone hills, during the prevalence of Cholera, not one escaped attacks of the disease."

The deleterious effects of impure water are not, however, confined to large cities; but they occur in small villages, sometimes in the solitary farm-house — any place, in short, in which the pump or well is in proximity to a farm-yard, pig-sty, privy, etc. The penalty for this indifference to obtain a supply of good water, is paid in the frequent occurrence of Bowel Complaints, and the sudden inroads of epidemic diseases, which attack without any apparent provocation. In the new settlements of the West and South especially, the enterprising pioneer and his family often pay a tax, in the shape of disease, and not seldom of life itself, from the use of bad water. In Great Britain, the spread of epidemic *Scarlatina*, of a most malignant type, in agricultural villages, has, in some instances, been traced beyond the possibility of a doubt, to the use of well-water containing nitrates and other matters, the product of the decomposition of the usual materials which collect in the vicinity of barns and stables.

Hard and Soft Waters. — Water is familiarly spoken of as *hard* or *soft*, according to its action on soap. Those waters which contain compounds of lime or magnesia, occasion a *curdling* of the soap, as these earths produce, with the fat of the soap, a substance which is not soluble in water. Soft waters do not contain these earths, and dissolve the soap without difficulty. Hence, with hard water, an excessive quantity of soap is required for washing and cleansing, while at the same time, the operation is less agreeable and satisfactory than with soft water. The saving, therefore, in the wear and tear of clothes, and in the article of soap, by the use of soft water in the place of hard, is very great.

To test the quality, or degree of hardness, of any water, dissolve a little soap in alcohol, and put a few drops into the specimen it is desirable to examine. If the water remains clear, it may be considered as perfectly soft; but if it becomes cloudy or opaque, the water may be considered as hard; and according to the density of the cloudiness, is its degree of hardness.

Many hard waters, as has been before stated, may be rendered softer by boiling. Especially is this the case with waters rendered hard by the presence of carbonate of lime, held in solution by carbonic acid in the water. Such water, of fourteen degrees of hardness, lost two degrees when merely made to boil; boiling for five minutes reduced the hardness to six degrees; and for a quarter of an hour, to a little more than four degrees. The hardness of most waters can also be corrected, by adding to them very moderate quantities of the alkalies, as soda, potash, etc. Of these, soda is preferable, as it is somewhat less corrosive in its action than potash, and is, therefore, less liable to injure. The excess of alkali added to a washing water, tends to fade

and discharge the colors of fabrics, and to impair their strength and durability.

For the preparation of solutions, soft water is always more suitable than hard water; inasmuch as the former, being free from dissolved mineral matters, is capable of exerting a greater solvent action. In all culinary operations, therefore, where the object is mainly to soften the texture of animal or vegetable substances, or extract from them, and present in a liquid form some valuable constituent, as in the preparation of soups, tea, coffee, etc., soft water is the best. In other instances, in which it is desired to cook a substance, and not to dissolve it or extract its juice, hard water is preferable. To prevent the over-dissolving action of soft water in cooking, salt is frequently added, which hardens it.*

It was calculated in 1850 that by the use of soft water in London, the saving of soap would probably be equivalent to the whole of the money at that time expended on water supply; and the saving in tea would equal one-third of the annual consumption. The estimate was doubtless exaggerated, but it sufficiently shows the economical importance of the change.

It has been already stated that waters containing lime held in solution by carbonic acid, "*fur*" or coat the sides of the vessels in which they are boiled. This matter, although it may appear trivial at first thought, or in a single instance, is really of importance, and, in the aggregate, is an unquestionable source of material loss. Thus a vessel so coated, besides being difficult of cleansing, is very apt to retain the odor and flavor of the various substances cooked in it. It also becomes an imperfect conductor of heat, and thus occasions an increased expenditure of fuel. If any one thinks this too small a matter to mention, let him try the experiment of coating the inside of a vessel with a thin shell of sulphate of lime (plaster of Paris), and he will then find, if never before, reason to believe in the correctness of the old proverb, "A watched pot never boils." Deposits from hard water on the interior of boilers, through the additional quantity of heat which they render necessary, also lead to the rapid destruction of the metal of which the boilers are composed; a fact that it is

* If one portion of vegetables be boiled in pure soft water, and another in water to which a little salt has been added, a decided difference in the flavor of the two will be discernible. In the case of onions, the difference is so marked that when boiled in soft water they come out almost entirely destitute of either taste or odor; while on the other hand, if cooked in salted water, they possess a peculiar sweetness and a strong aroma. The presence of a small quantity of salt in the water hinders the solution and evaporation of the soluble and flavoring principles of the vegetables. Peas and beans will not boil soft in hard water; a fact due to the circumstance that the lime present in the water coagulates and hardens a peculiar substance (*casein*) found in these seeds.— *Wells' Principles of Chemistry.*

important to bear in mind in seeking for a water supply for steam generation.

HINTS AND SUGGESTIONS RELATIVE TO THE CLEANSING OF TEXTILE FABRICS.

The best experience, in respect to the cleansing of woolens, flannels, etc., indicates that these fabrics should never be put into cold water, but always into warm water; and if changed from water to water, they should go from hot to hotter. In the cleansing of fabrics like *mousseline de laines*, on a large scale, preparatory to printing them with colors, it is customary to place them first in water at 100° F. to 120° F., and then treat them successively with water 10° F. hotter, in each case. Excessive rubbing in the washing of woolen fabrics is also to be avoided; for the reason that the fibers of wool, by friction and beating, tend to lock in, or, as it is technically called, *felt*, with one another, which in time produces shrinking of the fabric. Cold water, by producing contraction of the wool fibers, tends also to the same result. As a preparative for the washing of cotton or other fabrics, it has been recommended to soak the articles in warm water, to which a little wheat-bran has been added, over night. The bran undergoes a species of fermentation, which tends to loosen and facilitate the removal of the impurities adherent to the textile fibers. Soaking in water which has been rendered slightly alkaline by the addition of potash, or soda (pearlash or sal-soda), is also a useful preparation for washing; but a too free use of the alkalies shrinks the fibers of cloth (especially cotton,) and also impairs their strength. "Resin soap (*i. e.* common yellow soap) should not be employed to wash woolens, as the resin has the effect of hardening the fibers. Delicate textures, and especially white linen, should never be boiled in hard water. The carbonate of lime precipitated from hard water by boiling, is not only deposited upon the fabric, but carries down with it whatever coloring matter happens to exist in the water, and fixes it upon the fabric, imparting to it a disagreeable and unremovable dirty hue." — *Yeoman's.* For washing fine muslins of delicate colors, the following plan has been recommended: Take wheat-bran, about 2 quarts for a full-sized dress, and boil it for a half hour in soft water; then allow it to cool, strain the liquor, and use it as a substitute for soap-suds. It removes dirt like soap, and is inert as respects colors. Delicate muslins are often spoiled in washing, by the discharge of their colors from the use of warm soap-suds. In all cases, the suds and rinsing water, for colored articles of cotton, should be used as cold as possible.

For the removal of stains, spots, etc., from fabrics, it is difficult to

lay down specific rules ; the methods and agents to be employed varying with the nature of the case. Grease spots may generally be removed by the patient application of pure soap and water. Ether, Chloroform, and Spirits of Turpentine (pure and rectified), are also very effectual for the removal of spots of grease, oil, paint, and varnish ; Ether and Chloroform, applied with a sponge, are to be especially recommended for the cleaning of delicate silks, injured by contact with any of the above substances. The following is a preparation used by professional cleaners of fabrics: To 16 ounces of rectified Alcohol, add 10 grains of Carbonate of Potash (pure), and 1 ounce of Sulphuric Ether ; mix, and keep in a glass-stoppered bottle. Apply with a piece of sponge, soaking it thoroughly when the grease or paint spot is not recent. Fuller's-earth, which is a fine grained clay, and French chalk, which is a silicate of magnesia, both have a strong attraction for fatty and oily substances, and absorb them readily. They are used by spreading in the form of a dry powder, or thin paste, over the spot, and allowing the same to remain for a few hours; the spot then only needs to be brushed.

The gall of oxen and cows has been used from time immemorial for removing grease and dirt from fine woolen goods of delicate colors. It is, in fact, a liquid soda soap, and removes grease in the same manner as soap. As regards colors, it is inert, and some colors it is said to fix, and brighten. Gall has, however, a greenish tinge, which is bad for the purity of white articles, and is possessed, moreover, of a very offensive odor. To use gall, it should be mixed with just as much rain water as will allow the woolen article to be squeezed and handled freely. It requires considerable handling of the article in the liquid before the gall acts thoroughly. After the dirt and grease are removed, the dress, shawl, or whatever it may be that is washed in it, should be thoroughly rinsed in clean soft water. It will take three or four fresh supplies of water to remove all traces of the gall from the goods, and none must be left in, on account of the offensive smell. The use of gall infused in soft water, is especially recommended for washing fine woolens, and stamped muslins of light greens, blues, purples, and other delicate colors. One gall is sufficient for a small dress.

Unsized porous paper (*i. e.* blotting, or printing paper), pressed upon spots of spermaceti, stearine, or grease, with a warm iron, will often imbibe and remove the fatty substance.

For cleaning soiled wall-paper, the following plan is recommended: Take about two quarts of dry wheat-bran, inclose it in a bag of coarse flannel, and rub it over the paper. To remove iron rust, or ink stains, use Oxalate of Potash (Salts of Sorrel), or even Lemon-juice; the first should be applied in powder upon the spots, previously well moistened

with water, and after a little time, effectually washed out with pure water. Oxalic Acid is still more powerful for effecting the same objects, but it is more corrosive, and unless completely removed by washing, will injure the fabric.

Stains of indelible ink, prepared from Nitrate of Silver (the ordinary preparation), may be removed by first soaking in a solution of common Salt, and afterward washing with Aqua Ammonia.

For discolorations produced by acids, apply, as soon as possible thereafter, Aqua Ammonia. For stains produced by alkalies, apply strong pure Vinegar, sponging subsequently in both instances with pure water.

Fruit stains, wine stains, and those made by colored vegetable juices, are generally very intractable. Thorough rubbing with soap and soft water ; repeated dipping in sour buttermilk, and drying in the sun ; rubbing on a thick mixture of starch and cold water, and exposing long to sun and air, are among the expedients resorted to. *Yeoman's Chemistry.*

SEWERS AND SEWERAGE.

Under the general name of *sewerage*, are included the solid and liquid ejecta of men ; the filth of kitchens ; the drainings from stables, slaughter-houses, and markets ; the washings of streets and alleys, and the fluid refuse of every branch of industry. Of all substances, these are the most prone to decompose and give off poisonous gases (the nature of which has already been referred to). It is, therefore, of vital importance to the health of individuals and communities, that these products should not be allowed to accumulate in the vicinity of places occupied by man ; or if such accumulation is unavoidable, that they be regularly and systematically disinfected, or deprived of their noxious properties.

Where it is not deemed desirable to turn the sewerage to an economical purpose (*i. e.* to serve as a fertilizer), the most expedient plan for its removal is to conduct it by pipes and drains, laid at a suitable inclination, into some constantly-flowing stream, or changing body of water. When this is not practical, reservoirs, or cess-pools, should be provided for its reception. These should be removed as far as possible from dwellings, and so arranged that their contents may be conveniently disinfected and occasionally removed.

Construction of Sewers. — Egg-shaped culverts of a moderate size, and pipes of small diameter, perfectly smooth, are recommended by engineers as the most preferable form of sewer conduits. There is much less friction and risk of detention of sewerage, when the conveying duct is egg-shaped or circular, than when the sides are up

right. Care should be taken to avoid having the branches of sewers intersect at right angles; as a rectangular mode of junction increases the resistance to the flow of the current, thereby producing eddies, which, in turn, form injurious accumulations of deposits above the point of meeting.

A sufficient inclination should also be secured for the water to flow readily through the conduits. This required inclination will vary with the size of the drains. Thus, a good sized brook or stream will run sufficiently swift with a fall of *two* feet per mile; while a small brook will hardly keep an open course under *four* feet per mile. For sewers and drains of small size, it is generally agreed that the inclination should not be less than one inch per rod; and if a greater fall can be easily obtained, it is best to take advantage of it.

The size of a pipe for a local drain, or sewer, intersecting a main drain, will, of course, vary with the number of houses accommodated by it. In one instance, in London, an 18-inch drain was carried 400 feet back of forty houses, where there was a good supply of water, and it was kept clean and free from impediment. Experience, in Great Britain, has led to the recommendation of earthenware pipes, glazed, for local drains, in preference to brick conduits; as these last not unfrequently allow of an exudation of their contents. The joints may be put together with puddled clay, or with cement.

The escape of deleterious emanations from sewers and house-drains ought to be carefully guarded against; and especially is this necessary where there is not an independent supply of water continually flowing through the conduits. The cheapest and most ready method of preventing the return of reflux odors from sewers, is by placing a delicately-hung flap-valve of galvanized iron at the extreme end of the conduit tube, where it discharges into the main drain. The valve will always remain shut, except when opened by a flow from the house. Several other plans have also been adopted and used; one of which, known as the "water-pan," is familiar to all plumbers, and is not expensive.

The most ready and effectual method of cleansing foul sewers, drains, gutters, etc., is to *flush* them with water.

Disposal of Sewerage. — The sewerage accumulation of a large town or city, in the course of a year, is enormous; and some authorities have estimated it as high as a tun for each individual. How to dispose of this material — *waste* in one sense and *valuable* in another — in a manner consistent with health and economy, is one of the great problems of modern civilization. To allow it to flow into brooks and rivers, is to pollute the waters which are made its receptacle; while the waste of so large an amount of valuable fertilizing material is a direct pecuniary loss to agriculturists, and to the State. While no

practical plan for utilizing sewerage on a large scale has yet been devised, or can be here recommended, it may not be inappropriate or uninteresting, in this connection, to refer to a few of the estimates which have been made relative to the value of sewerage for agricultural purposes.

It has been computed that if the whole sewerage of the city of New York and its environs, could be employed for manurial purposes at a sufficient distance from the city, it would be equal in value, *per annum*, to 52,000 tuns of the best Peruvian guano, of the value of $2,550,000.

An estimate by a distinguished British agriculturist, places the question in a still stronger light. It rates the annual average value of the excreta of each individual at five dollars; so that, taking the whole population of Great Britain at twenty-eight millions, "we are positively," says this writer, "*throwing away* every year that which is equivalent to *twenty-eight millions sterling*," or one hundred and forty millions of dollars. According to Dr. Lyon Playfair, a pound of urine is capable of increasing the production of grain by an equal weight; so that even allowing for some exaggeration in this estimate, the human urine wasted in the British Kingdom, would serve to produce more than all the grain required for the consumption of their entire population; besides affording, through its fertilizing influence on lands, at present imperfectly tilled, or not tilled at all, a source of employment to a superabundant laboring population.

DISINFECTANTS AND DEODORIZERS.

When the removal of the readily decomposing excreta of men and animals, the offal of kitchens and stables, and the refuse of manufactories, by a system of sewerage and drainage, is impracticable, or unadvisable, some method ought to be adopted to prevent the emanation of poisonous gases invariably given off from such accumulations, and this leads to the consideration of the subject of Disinfectants and Deodorizers.

There are some persons, doubtless, who, having lived for years in proximity to stables, open cess-pools, obstructed and filthy gutters, etc., and having for the same time enjoyed a tolerable degree of health, are ready to scout and decry the necessity of preventive measures of the kind above referred to. But of these people it may be affirmed with absolute certainty, that if they have not as yet been directly poisoned by the continued inhalation of a corrupt atmosphere charged with gaseous poisons, they are nevertheless predisposed — or primed as it were — for disease; so that even a slight change in the conditions of the atmosphere, food, or their mental or physical neces-

sities, serves as a spark to ignite into febrile fire their weakened and susceptible systems. And if it were possible for us to obtain the statistics, it would undoubtedly be found that the aggregate loss of life, through the slow and insidious action of poisonous gases arising from uncared-for filth — manifesting itself in the form of Digestive Derangements, Bowel and Kidney Diseases, Consumption, Scrofula, etc. — would be greater than that effected by the most fearful pestilences. A confirmation of these views is also found in the fact, that statistics show that the air of towns (where, from the congregation of inhabitants, decomposing organic products necessarily tend to accumulate), differs from that of the country in the ratio of 22 to 34. Or, in other words, where an individual has the chance of obtaining the age of 22 years in the air of a town, he would have an equal chance of living to the age of 34 years in the air of a salubrious country residence.

All disinfectants and deodorizers should be regarded as simply aids for restoring and preserving healthful purity, and not as substitutes for pure air and cleanliness. There can be no substitute for a pure atmosphere.

Chemists make the following distinction between disinfectants and deodorizers: A *disinfectant* is an agent that attacks poisonous, miasmatic, or putrescent matters, and either by uniting with them, or breaking up their constituent elements, transforms them into innocuous products. A *deodorizer*, on the other hand, merely masks or destroys the bad odor, without reaching the true spirit of evil. Its action is not strictly on the putrid product, but merely on the sense of smell, which it blunts to the action of the offensive vapor. During the Middle Ages, when the Plague, Black-death, Sweating Sickness, and Pestilential Fevers desolated the cities of Europe, immense importance was attached to the use of perfumes as protectives against contagion; and fumigations, with costly spices, volatile oils, and rich-smelling Oriental drugs, were largely used in the houses of the rich; but with no good effect.

The name *anti-septics*, is given to a class of substances which give stability to organic matters, and prevent its putrefaction or decomposition. Familiar examples of anti-septic agents, are salt (used for preserving meat); sugar (used for preserving fruits); vinegar (used in pickling); creosote and the empyreumatic oils of wood, heat, etc. (applied in the smoking of meats).

Natural Disinfectants.— *The atmosphere* is a great disinfector; partially by its removal, with its currents, of contaminating matter, and partially by its power of oxydation.

Water is the next great disinfectant employed by Nature. As putrefaction, however, will not take place in the absence of moisture, water may also be regarded as one of the greatest promoters of cor-

ruption. Water acts as a disinfectant, by the simple act of washing. Each shower of rain, each river and stream, removes from the land a certain quantity of substance susceptible of decomposition. The ocean bears the decaying matter further from the land, mingles it with purer water, washes it, dashes it about in the air, and thus produces oxydation and purification.

Soil, or fresh earth, is another great disinfectant, and in conjunction with air and water, one of the most efficient of all known agencies. Organic and putrid substances sink into its porosities in solution, and mixed with air, thus become of necessity oxydized. Water impregnated with every impurity, in sinking through the earth, is filtered, and is only deleterious where the abundance of animal is more than can be acted upon by the soil. As respects the deodorizing power of common earth, every one is familiar; "in fact, the graveyards of every city testify to the enormous quantities of organic matter that can be disposed of through its agency; and no one who has witnessed the rapid deodorizing power of clay, when sewerage or night-soil is distributed upon the land, can doubt its efficacy. The Chinese have long taken advantage of this power, for they mix night-soil with one-third of its weight of fat marl,* and knead it into cakes, which are common articles of commerce. In practice, also, it has been found, that a tun of clay will completely deodorize about three tuns of the solid matter of sewerage."— *Dr. Letheby.*

Light is another natural disinfectant, and tends to promote oxydation.

Heat and Cold are likewise powerful disinfectants — partly natural, partly artificial.

"The value of fire as a disinfectant was known, and has been recognized since the remotest epochs. The sacrificial altars of early nations, were undoubtedly rude methods by which the agent was employed; and so fully did the ancients believe in its salutary action, that in times of pestilence it was often resorted to as the only effective means of purifying the atmosphere. In the popular mind, there has always been a notion that the Great Plague of London was exterminated by the great fire that occurred about the same time." "As a means of immediate disinfection of contaminated garments, bedding, and even close apartments, ships, etc., heat is at once a cheap and most effectual method. The boiling of infected clothing, etc., is admitted to effectually destroy any contagious poison, and practically, upon a large scale, in such work, experience proves it is best to employ steam as a means of heating. It is probable that no circumstance contributes more directly to the perpetuation and spread of Typhus

* The name marl, is used to designate all friable compounds of clay and lime.

Fever, than the accumulation and bad management of contaminated clothing, etc., that ought, under all circumstances, to be purified (by neat), as soon as it leaves the patient, or the bed." — *Bulletin of the U. S. Sanitary Commission*, 1864.

"*Frost, or Low Temperature*, when continued a sufficient length of time, will effectually destroy both the miasma that produces Yellow Fever, and the paludal malaria that produces Intermittent and Remittent Fevers; but such low temperature has no effect to arrest those Fevers in the persons suffering from them. It is also worthy of note, that a freezing temperature does not appear to mitigate the personally infectious poisons, or contagions (*i. e.* Small-pox, etc.); though, with certain exceptions, it arrests putrefaction and the action of fermentation." — *Ibid.*

Artificial Disinfectants.—*Charcoal.* — First in efficiency, cheapness and availability of artificial anti-septics, deodorizers, and disinfectants, is charcoal. The disinfective properties of charcoal are due almost entirely to its great porosity. Liebig states that the pores in a cubic inch of beach charcoal, must, at the lowest computation, be equal to the surface of 100 square feet; and some chemists have estimated it at more than double this amount. By reason of this peculiar physical structure, the charcoal becomes endowed with a remarkable capacity for absorbing and condensing gases; and hence, when it is exposed to an atmosphere containing the putrid products of decomposition, it quickly absorbs them. Thus far, the action of charcoal is simply mechanical, but it does not stop here; for when once the miasmata become stored in the pores of the coal, a secondary and chemical action is promoted by reason of the intimate contact of the former with the air condensed also by the charcoal. This contact causes rapid oxydation to take place, and as oxydation is a species of combustion, the putrid matters are burned up and destroyed as effectually as if they were passed through the ignited coals of a furnace. Freshly burned and broken charcoal, will absorb from ten to fourteen *per cent.* of its own weight of gases and moisture from the atmosphere during a period of twenty-four hours; and it is capable of absorbing ninety times its own volume of ammonia, or fifty-five times its own volume of sulphureted hydrogen. The disinfecting and deodorizing power of fine charcoal, depends greatly upon its being both fresh and dry. Charcoal loses its absorptive and disinfecting power in a great degree by use, but can be restored to full efficiency by moderately heating it.

Properly applied, charcoal is an arrester of putrefaction, and as such, it is recommended for employment in the preservation of animal food, meats, fish, etc. Animal matter, in an advanced state of

putrefaction, loses all offensive odor when covered with a layer of charcoal; it continues to decay, but without emitting any ill odor.

All kinds of charcoal are not, however, equally effective; wood charcoal, and the charcoal derived from the carbonization of peat, being the most valuable. During the Crimean war, the British Sanitary Commission sent out whole ship-loads of peat charcoal, to be used as a deodorizer and disinfectant of the masses of putrescent material that had accumulated in the vicinity of military camps, hospitals, and barracks. A report of that commission recommends the following as one of the most efficient of deodorizing compounds: *one part of Peat Charcoal, one part of Quicklime, and four parts of Sand and Gravel.*

Night-soil can be deodorized and removed without offense by covering it with fine charcoal. *Poudrette*, without an offensive smell, has been, for some years past, manufactured on a large scale from night-soil, by the following method: to three cart-loads of coal ashes add one of charcoal, and to fifty cart-loads of night-soil add one of the above mixed coal ashes and charcoal. The charcoal used is obtained from whisky refiners, at a cost of from fifty cents to one dollar per cart-load. It is thoroughly dried before being used.

Advantage has been taken of the power of charcoal to absorb noxious gases, to construct a respirator for protection against the inhalation of malarious and infected air. It consists of a hollow case of wire-gauze filled with coarsely-powdered charcoal, and fitted over the mouth and nostrils by straps. All the air that enters the lungs must pass through this charcoal sieve, and in so passing, is deprived of the noxious vapors or gases it may contain. For persons engaged in hospitals, dissecting-rooms, the holds of ships, or in the vicinity of sewers, this device is most valuable. Foul water filtered through a layer of powdered charcoal, is decolorized and purified.

Sugar refiners render brown sugar white by passing it in solution through animal charcoal. Ale and porter, subjected to the same treatment, are not only decolorized, but deprived of their bitter principles. In case of poisoning with vegetable poisons, such as Opium, Morphia, Strychnia, etc., one of the best immediate antidotes which can be given, is powdered charcoal in water; this absorbs the poisonous principle, and renders it inactive. The decolorizing action of charcoal may be illustrated by filtering porter, Port wine, or water colored with ink, through a small quantity of animal charcoal. The filtered liquor will be deprived of smell, taste, and color.

The use of charcoal air-filters, consisting of a layer of charcoal in coarse powder, varying in size, according to circumstances, between a small bean and a filbert, are strongly recommended by British Sanitarians for ventilating purposes. The charcoal is placed between two

sheets of wire gauze, fixed in a frame, and can be readily applied to buildings, ships, to the air-shafts of sewers, to water-closets, and various other purposes. All the impurities in the air are absorbed by the charcoal, so that a current of pure air alone passes through the filter; and in this way pure air may be obtained from exceedingly impure sources. The efficiency of the charcoal appears never to diminish, if it is kept dry, and its pores are not choked up by dust.

Quicklime is a cheap and useful agent for admixture with animal and other matters in a state of putrescence, as it absorbs moisture and many noxious gases, and, by its anti-septic properties, retards, and even arrests, putrefaction. It has, however, this objectionable feature, that it eliminates and sets free the ammoniacal gases. Lime is especially convenient for use as an anti-septic, and is highly to be recommended for local applications, as in whitewashing,* and the sprinkling of gutters, cellars, damp surfaces, and putrescent substances, and for temporarily arresting putrefaction. Lime should be used dry and unslaked, except it be for the special purpose of combining with carbonic acid gas. For this end it should be reduced to creamy hydrate, and in overcrowded apartments for the sick, it may be usefully employed in this way, distributed in shallow plates.

The following preparation has been recently patented in Great Britain, as a disinfectant: Common sea-shell (oyster, cockle, etc.) are calcined in a furnace, until they are reduced to a friable condition, and readily broken and powdered. To this powder is added half the

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*For whitewashing cellars and rough walls, a simple mixture of fresh slaked lime and water is the best. For house-rooms, the common "Paris-white" is highly recommended, prepared as follows: Take, for each 2 pounds of whiting, 1 ounce of the best transparent glue, cover it with cold water over night, and in the morning simmer it carefully, without scorching, until dissolved. The Paris-white is then put in hot water, and the dissolved glue stirred in, with hot water enough for applying it to the walls and ceilings. This makes a very fine white, so firm that it will not rub off at all. When common fresh slaked lime is used, some recommend adding to each 2½ gallons (a pailful) 2 table-spoonfuls of salt and ½ pint of boiled linseed oil, stirred in well while the mixture is hot. This is recommended for out-door and in-door work. The *American Agriculturist* recommends the following mixture for an out-door whitewash: "Take a tub, put in a peck of lime, and plenty of water to slake it. When hot with slaking, stir in thoroughly about half a pound of tallow, or other grease, and mix it well in. Then add hot water enough for use. The compound will withstand rain for years."

We add one other receipt: "Take a clean barrel that will hold water, put into it ½ bushel of quicklime, and slake it by pouring over it boiling water sufficient to cover it four or five inches deep, and stirring it until quite slaked; dissolve in water, and add 2 pounds of sulphate of zinc, and 1 pound common salt, which will cause the whitewash to harden on the wood work in a few days; add sufficient water to bring it to the consistency of thick whitewash. To make the above wash of a pleasant cream color, add 3 pounds yellow ocher. For fawn color, add 4 pounds umber, 1 pound Indian red, and 1 pound lampblack. For gray or stone color, add 4 pounds umber and 2 pounds lampblack. The color may be put on with a common whitewash brush, and will be found much more durable than common whitewash."

quantity of sulphate of iron (copperas), and the result is, a fine yellow powder, resembling ocher. The compound is inexpensive, and is said to possess powerful disinfecting properties; the proportions in using being one part of the disinfectant to one hundred of the matter to be treated.

Sulphate of lime (*gypsum*, *plaster of Paris*), *sulphite of lime*, *and porous clay*, are all valuable absorbents of ammoniacal gases and foul effluvia. The air-tubes can be kept sweet and pure, and the quality of the manure there collected, improved, by sprinkling the floors and deposits, from time to time, with ground plaster. A much vaunted French disinfectant, known as "Corné & Deméaux's Disinfecting Powder," consists of about 94 per cent. of finely ground gypsum, and 5 or 6 per cent. of coal-tar, or the heavy ore of coal-tar. Hyposulphite of lime possesses the property of absolutely arresting fermentation, and is the substance used for preventing the souring of cider, and for aiding in the granulation of sugar from the juice of the sugar-cane.

Coal-tar, in almost any form in which it can be used, is a powerful disinfectant. When coal-tar is distilled, it furnishes, first, a light oil, which is a naptha; and next, a heavy oil. This last is, in great part, composed of creosote, and contains, also, an acid, known as carbolic acid. These two substances are among the most powerful of all known anti-septics, disinfectants, and deodorizers. Meat steeped for about twenty-four hours in a solution of 1 part of creosote to 100 of water, is rendered incapable of putrefaction, and acquires a delicate flavor of smoke. It is, indeed, the presence of this principle in wood-smoke, which gives to the latter its characteristic smell, its property of causing lachrymation, and its power of curing meats and fish.

In Europe, during the last few years, disinfecting compounds, manufactured out of coal-tar, or its distillates, have been extensively used. They are prepared, mainly, by mixing coal-tar with sulphate of lime (gypsum), or fuller's-earth, in such proportion that the result will constitute a dry powder. This powder is wonderfully efficient in delaying the processes of decomposition, and in deodorizing and destroying all noxious effluvia. "A distinguished Medical Inspector in our army, when cut off from ordinary medical supplies, effectually and quickly abated the nuisances pertaining to an extensive fort garrison by means of an extemporized mixture of coal-tar, procured from the gas-works on the premises." For use in chamber-vessels, close stools, etc., the French prepare a very neat fluid preparation, by mixing equal parts of coal-tar, alcohol, and hot soft-soap.

Chlorine.—Of all readily available disinfectants and deodorizers, that which holds the foremost rank, however, is *chlorine*, either in the state of free gas, or in combination with lime or soda, as chlorides

(hypochlorides) of these bases. Chlorine acts not only chemically upon the gases produced, but upon the organized molecules of the miasmatic matter itself, decomposing and destroying them. Its penetrating quality enables it also to reach the poisonous gases in their most secret recesses, and diffused in an atmosphere loaded with typhoid or malarial poisons, it will remove all infection almost immediately. The use of chlorine as a disinfectant, however, requires care. In the form of bleaching powder (chloride of lime), it may be sprinkled over the surfaces of damp, decomposing, or putrescent materials. For use in apartments, it is best to mix the bleaching powder with a little water, and expose the same to the air in shallow vessels, if possible upon a high shelf. This compound is gradually decomposed by the carbonic acid of the atmosphere, and the chlorine being evolved, falls slowly down and is diffused through the room. If a more rapid action is required, a little dilute sulphuric or hydrochloric acid may be allowed to drop into the chloride of lime solution from a vessel suspended above it, by means of a piece of lamp-wick arranged in the form of a syphon. Another method is to suspend in the apartment cloths steeped in a solution of bleaching powder; and in the absence of bleaching powder, the gas may be easily generated by one of the methods already described — care being taken to avoid excess.

For disinfecting the wards of hospitals and similar places, Prof. Faraday found that a mixture of 1 part of common salt, and 1 part of the binoxyd of manganese, when acted upon by 2 parts of oil of vitriol previously mixed with 1 part of water (all by weight), and left till cold, produced the best results. Such a mixture at 60° F., in shallow pans of earthenware, liberated its chlorine gradually, but perfectly, in four days. The salt and the manganese were well mixed, and used in charges of 3½ pounds of the mixture. The acid and water were mixed in a wooden tub, the water being put in first, and then about half the acid; after cooling, the other half was added. The proportions of water and acid are 9 measures of the former to 10 of the latter.

"It should be borne in mind," says Prof. Faraday, "that chlorine in any form must only be used as an aid to proper ventilation. It is a necessary condition of health that our houses and rooms be properly ventilated. There is no substitute for ventilation any more than for washing or for general cleanliness. Chlorine, like medicine, ought in general to be used on special occasions, and under advice. In a sick-room, where ventilation is often difficult, chlorine, liberated in very minute quantities, will often be found singularly refreshing; but in this, as in all other cases of fumigation with chlorine, all metallic

articles in the apartment ought to be removed, for these become speedily tarnished by the action of chlorine."

Ozone.—Within the last few years, the attention of scientific men has been attracted to the powerful disinfecting action of another chemical agent, to which the name of "*ozone*" has been given. This substance is supposed to be oxygen electrified. It is invisible, and subtle, and betrays its presence, when concentrated, by a pungent and peculiarly disagreeable odor. It is produced naturally in the air, during a thunder-storm, whenever an emission of the opposite electricities occur. It also may be made artificially, by passing a succession of electric sparks through a tube or vessel containing atmospheric air or oxygen gas. It may also be produced by the slow action of phosphorus on oxygen or atmospheric air. Ozone is said to be the means by which the natural equilibrium of oxygen in the air is maintained against the disturbance which would otherwise be induced by respiration, combustion, and oxydation, generally going on upon the surface of the earth, as it is the most powerful of all oxydizing agents. One very interesting fact with regard to it as a disinfectant, is the circumstance that it is usually absent from the air of inhabited dwellings, hospitals, and badly ventilated apartments. Moreover, in malarious districts, it is said that the air is either wholly deficient in ozone, or else contains it in the least appreciable quantity. It must, however, be stated, in qualification of its beneficial sanitary influences, that when it exists in the air in undue proportion, it begins to assume baneful properties, and produces inflammatory action upon the mucous membrane of the throat and larynx. It is thus supposed to be often the cause of Influenzas and Bronchial Affections. A ready way of testing the presence of ozone in the air, is by means of iodine starch-paper, which may be simply prepared by mixing a little starch with a solution of iodide of potassium — a salt obtained of any druggist — and imbuing unsized paper with the compound. When slips of this paper are exposed to air containing ozone, they will gradually turn blue. The paper should be exposed in the shade, and out of the way of volatile exhalations, and the sun's rays. When the test indicates a deficiency of ozone, as it may do in the apartments of the sick, the sign naturally suggests the propriety of using a remedy. This is not difficult to be applied; for it is only necessary to pour some water in a broad and shallow plate, immerse sticks of phosphorus at half their length in it, and leave the whole exposed in the apartment to be disinfected. The chemical combinations which ensue will produce ozone, and the test-paper will show when a sufficient quantity has been generated.

Other Disinfectants and Deodorizers. — *Permanganate of Potash* is a soluble substance, particularly convenient of application, and

remarkably certain and efficient in its effects as a disinfectant and deodorizer. Its employment is limited, mainly, to local applications, and to general effect upon the atmosphere of contaminated apartments, by means of evaporating cloths saturated with a strong solution of the permanganate. The preparations extensively advertised under the names of "Condy's Disinfectant," "Darby's Fluid," "Ozomised Water," are but solutions of permanganates in water, and may be cheaply prepared by those desiring it. *Chloride of Zinc*, generally known in solution as "Burnett's Disinfecting Fluid," is a powerful anti-septic, though not valuable as a deodorant. It is most to be valued for its property of promptly arresting putrefactive process. *Nitrate of Lead*, known in solution as "Ledoyon's Liquid," is a most useful and cheap agent for deodorizing a close apartment, and the bedding and clothing of sick persons, by means of a solution distributed on shallow vessels or saturated cloths.

Chloride of Zinc and Nitrate of Lead, are largely used by embalmers for delaying decomposition in dead bodies. In the absence of an embalmer, they may be employed for this purpose, by wrapping the body in a folded sheet saturated with either of these salts.

Coffee is a powerful deodorizer; it has instantly destroyed the smell of putrefying meat; and in half a minute it has permanently cleared a house of the effluvia of a cess-pool. To use coffee for these disinfecting purposes, dry the raw bean, pound it in a mortar, and roast the powder on a moderately heated iron plate until it is of a dark brown tint; then sprinkle it in sinks, or cess-pools, or lay it on a plate in the room which you wish to have purified. Coffee-acid, or coffee-oil, acts more readily in minute quantities.

CONTAGION AND MIASM.

As these terms have been used freely in the foregoing remarks, and are of common occurrence in medical and sanitary treatises, a few words in respect to them may not be inappropriate. We apply the term *Contagion* to that subtile matter which proceeds from a diseased person, or body, and which communicates disease to another person or body. It is characterized by its ability to produce itself. *Miasm*, on the contrary, is the product of the decay or putrefaction of animal or vegetable substances, and causes disease without being itself reproduced. The nature of the substances which constitute contagion and miasm, is not well understood; according to some authorities, they are merely putrid matters; and according to others, they are microscopic plants or animals, which, like yeast, readily undergo decomposition and fermentation. "Very many curious observations have been made upon these topics. A forest, interposed to the pas-

sage of a current of moist air charged with pestilential miasmata, sometimes preserves all behind it from its effects, while the uncovered portion of the same district is exposed to disease. The trees in such cases appear to filter the air, and purify it by removing the miasmata. Trees also appear to prevent miasmata by absorbing it. The negroes of the South plant the sunflower near their cabins as a preventive against Fever and Ague. Facts also show that malaria does not prevail in the neighborhood of swamps surrounded with thick forests — the vicinity of the Dismal Swamp, for example, being healthy, while the marshes of the adjacent sea-board are most pestilential." Flint, in his account of the Mississippi Valley, mentions the fact that the wood-cutters on the banks of the streams where the trees had been cut away, were constantly attacked by Malarious Fevers, while such diseases among the workmen in the forests were comparatively rare, although the ground on which they worked was quite as moist. Every tree which they left to decay on the ground helped to create the poison, while every tree left standing helped to absorb it. Many cases might be cited where the cutting down of woods has had a most unfavorable effect upon the health of the surrounding region. The district around Rome is only a celebrated instance of what is a very common experience. Dampness is not a source of miasmata, but decomposition caused by too rapid drying, whether of vegetable matter or animal infusoria. A ditch which alternates from wet to dry, or a pool which is weekly emptied and replenished, as wind and shower follow each other, gives forth a much more deadly poison than ground which is uniformly and steadily saturated. — *Wells' Principles of Chemistry.*

Mildew is a species of decomposition occasioned by the development and growth of a class of microscopic fungi; (a fungus being a cellular, flowerless plant). The dark spots observed upon awnings, sails, etc., exposed to the weather, are familiar examples of its action. The most effectual agent in preventing mildew, is chloride of zinc.

Moldiness is occasioned by the growth of minute vegetation. Ink, paste, leather, and seeds most frequently suffer by it. A clove will preserve ink; any essential oil answers equally well. Leather may be kept free from mold by the same substance. Thus, Russian leather, which is perfumed with the tar of birch, never becomes moldy; indeed, it prevents it from occurring in other bodies. A few drops of any essential oil, will keep books entirely free from it. For harness, oil of turpentine is recommended. Alum and resin are used to preserve bookbinder's paste, but ineffectually; oil of turpentine succeeds better; but, by small quantities oil of peppermint, anise, or cassia, paste has been preserved for several years. Dr. Macculloch recommends the addition to the flour and water of some brown sugar, and a little

corrosive sublimate; the sugar keeping it flexible when dry, and the sublimate preventing it from fermenting, and from being attacked by insects. A few drops of any of the essential oils may be added to the paste when it is made. It dries when exposed to the air, and may be used merely by wetting it. Seeds may also be preserved by the essential oils; and this is of great consequence, when they are sent to a distance. Of course, moisture must be excluded as much as possible, as the oils or ottos prevent only the bad effects of mold.

Many of the organic poisons which are generated by the processes of decomposition, and which act with deadly effect upon the animal system, do so, not by entering into combination with it, or by reason of their containing a specific poisonous principle, but solely by virtue of their peculiar condition; or in other words, these substances, being in a state of decomposition themselves, act as ferments, and by their simple presence tend to excite decomposition or disease in the animal substances with which they are brought in contact. The most striking illustration of this principle, is to be found in the case of the wounds which physicians sometimes accidentally inflict upon themselves, in the dissection of dead bodies. The knife, in such instance, introduces through the wound a minute portion of matter in the state of decomposition or putrefaction, which acts as a *ferment*, and causes the healthy blood in contact with it to pass into the same decomposed state as itself; the action once commenced, extends with great rapidity, and often affects the whole body and produces death; injuries to the system of this character, being almost beyond the control of medical treatment. The virus of Small-pox, Plague, etc., appear to act in this manner, inasmuch as the closest examination has utterly failed to extract any poisonous principle from them. When brought in contact, however, with the blood, either directly or indirectly, they communicate to it their own condition. It is also a curious fact, that many of the poisons, which, as stated above, appear to act as ferments, and readily excite disease when brought in contact with the blood, are wholly inoperative when introduced into the stomach. The explanation of this is, that they are alkaline or neutral in their properties, and are therefore destroyed or neutralized by the free acid which always exists in the stomach. Poisons of a similar character, however, which have an acid reaction, appear, when placed under the same circumstances, to retain all their frightful properties. The products of the incipient putrefaction of meat and fish are particularly liable to act in this manner. In Germany, especially, the effects of a poison of this character, resulting from a peculiar kind of putrefaction occurring in sausages, and hence termed the "sausage poison," have been very carefully studied. The symptoms which precede death in cases of poisoning by putrefied sausages, are very

remarkable. "There is a lingering and gradual wasting of muscular fiber, and of all the constituents of the body similarly composed; the patient becomes much emaciated, dries to a complete mummy, and finally dies."

The flesh of animals killed when overdriven or exhausted, is also very liable to produce diseases which, in the rapidity of their action and deadly effect, resemble Cholera; the symptoms, however, do not generally manifest themselves until some little time has elapsed after the food has been received into the stomach. The origin of the poison in the meat in these instances is explained as follows: all mental and physical effort is accompanied by and requires an expenditure of healthy animal substance. The brain, for example, is undoubtedly used up by thinking, the muscles by exercise, the nerves by excitation. In the healthy state of the system, the waste thus occasioned is at once restored, and the products of decomposition are removed by the organs of secretion, and thrown off from the body. If the functions of the organs of secretion are impeded, the products of decomposition accumulate in the system and occasion disease. In the case of overdriven animals, the products of decomposition consequent upon unusual and excessive physical exertion, remain in the body, because the organs of secretion have not had sufficient opportunity to discharge their office before the animals are slaughtered. The meat, therefore, is full of substances in just that state of decomposition which enables them to act most effectually as ferments, and their presence, therefore, renders the flesh of the most healthy animal unwholesome. It should also be mentioned, that the most severe cases of poisoning of this character seem to occur when the putrefactive fermentation in the meat has only just commenced, and when its presence is hardly discernible by the senses.

DRAINAGE.

The object of drainage, is to remove an excess of moisture from the soil. "Soils which retain an excess of moisture are correctly termed cold, while more porous soils of a sandy nature are called warm. The former are chilled, by the evaporation continually going on; while the latter are warmed below by the rain-water which percolates through from the surface, and are heated by the direct action of the sun's rays. By experiments made in Great Britain, it appears that by giving free passage to the water through a cold soil by thorough drainage, its temperature at the depth of seven inches may be raised 10° above that of undrained adjoining land of the same quality. Thus, drainage produces the effect of a warmer climate, and may add, in fact, many days to the length of the season; and

this not merely by reason of the warmth extended for a longer period, but in the spring the soil is sooner prepared for cultivation, and may be in condition for plowing and planting even two weeks before neighboring land, of a similar quality in other respects, would admit of working." — *Flint.* Soils abounding in moisture, are, moreover, well known to be unfavorable to the production of large crops; all the grains and roots grown upon them are believed to be always inferior in quality to those grown upon dryer soils.

An excess of moisture in a soil is also a hindrance to perfect tillage, as it prevents thorough pulverization of the earth by the plow and harrow, and the circulation of the air to the roots of plants. It is also an acknowledged fact, that while efficiently drained land has no surplus water, it always withstands a severe drought better than undrained land, which abounds in water during the major part of the year.

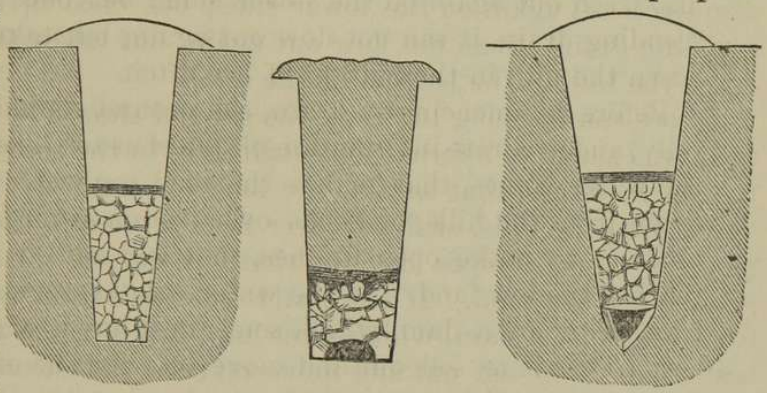
As an illustration of the amount of water which can be withdrawn from a soil by a moderate system of drainage, it has been estimated if the surplus water of a soil and subsoil, is only equal to a depth of two inches (and at the wettest part of the season it undoubtedly, in many soils, greatly exceeds this), then the whole quantity retained in a field of ten acres would exceed *seven thousand hogsheads.*

Such, then, in brief, is the important relation which drainage sustains to agriculture; but as regards man, the necessity of the drainage of land, as a sanitary measure, can hardly be overrated. By recent researches of Dr. Henry J. Bowditch, of Boston, it appears that the localities in Massachusetts, in which statistics prove Consumption to be most prevalent, are almost invariably localities which are badly drained; fifty out of fifty-five districts of marked Consumptive character in the above State being found to be wet by contiguity to ponds or marshes, or by reason of low, moist lands. At the same time it was observed that dry and drained localities in the immediate vicinity of the above-noticed unhealthy districts, were as free from any tendency to induce or aggravate Consumption, as more distant often visited by patients with the hope of recovery. It has also been from time immemorial remarked, that undrained lands tend to induce Fevers and Agues; and as these continue to prevail in the same localities after the original forests have been swept away, it is evident that the cause is not so much the decay of vegetable matter, as the dampness produced by the continual saturation of the earth with moisture.

How to Construct Drains.— Drainage is effected either by opening channels upon the surface (surface drainage), or by means of covered drains. The former are often very useful, but they are liable to serious objections. They do not effectually reach the cold, stagnating accumulations of water beneath the soil; they interfere with proper

cultivation; their sides become the favorite *habitat* of weeds; and they take up a good deal of ground which might otherwise be made productive. Such ditches should be used only as brooks in the lowest grounds, to convey away the water discharged into them by the underground drains coming down the slopes.

Under drains avoid these objections, and are more economical. They may be constructed of stones, or with tiles made for the purpose. To lay a stone drain, a trench must first be dug to the required depth, and the bottom filled up with stones in the manner represented in the annexed plates.



Another form of drain, known as the "brush drain," is constructed by digging a trench and filling it up to a certain depth with small brush. The brush is then thoroughly pressed down, and covered over with sods, with the turf side down. Brush drains, well constructed, will answer a good purpose for eight or ten years. Another form of cheap drain, known as the "log drain," is made by laying down two logs in a trench, with a third above them; the whole forming a triangular construction, with opening at the base.

The most effectual, and, in the long run, the most economical drain, is, however, the "tile-drain." By tiles, we mean short pipes, molded and baked, of clay. They are made of various sizes, from two to eight inches in diameter, and about a foot in length; their cost varies from $10 to $15 per thousand. Tiles are carefully set in the ground, end to end, at the bottom of a trench (dug with excavating tools, made for the purpose), just wide enough to admit them. The pipes, or cylindrical tiles, are often furnished with a collar, which slips over and holds the adjoining ends — but this arrangement is not essential. The water, filtering through the soil, finds it way into the pipes by numerous joints, entering chiefly at the bottom; and it is to facilitate this action, that the tiles are made in short lengths. The fall should not be less than one inch to the rod. Tile drains, properly laid, may be expected to last for at least a half century.

It is recommended that the depth of drains, their size, and the distance between them, should be settled by experiments, on a small scale, before the general work of draining a field, farm, or estate, is commenced. The best authorities recommend an average depth of

four feet. The distance apart will vary with the character of the soil. If the soil is stiff and clayey, it is well not to exceed thirty feet; but if the soil is very porous, the trenches may be dug forty feet apart, or even more. The deeper the drains are placed in the soil, the less must be the distance between them. When practicable, drains should be laid down hill, by the shortest or steepest course. If the drain descends *obliquely*, and if water will leech into it from above, it may also leech out again on the lower side; but once in the directly descending drain, it can not flow out again, but takes the shortest cut down the hill, in the bottom of the ditch.

Before commencing to drain, the ground should be examined carefully, and accurate information obtained as to the source from whence the water comes, that makes the land too wet. If the water runs down from the hills, or floods over from a swamp, the most obvious mode is to make open ditches, that will cut off the water before it reaches the low land. If the water sets back from a stream, raised from below by a dam, which some mill has a right to keep up, the best course is to sell out and move off; for the effects of such backwater has no limit. A good rule for determining the necessity of draining, is to observe whether water will *stand* in holes dug two or three feet, for this purpose. If the subsoil is porous, the water will immediately sink away, and ditches would be wholly useless. But if water will stand forty-eight hours in the holes, draining is necessary to relieve the subsoil of this cold and chilling mass which fills it.

In some places, a single drain, properly located, will effect complete drainage of a large piece of land; in others, numerous parallel, or branching drains, may be requisite. To ascertain this very important point, *trial holes* should be dug at regular intervals all over the piece of land to be operated on; the rapidity with which they fill, and the quantity they contain, will afford a guide for the commencement of operations. A ditch is cut in such places as appear best, and then its effects are observed on the trial holes. Those which are soon laid dry by this means, show that no more drains are needed there, even if at some distance. While those that continue filled with water, indicate that further drains are required, the position of which must be governed by observation and circumstances.

It is important to have a good drain under, or in close proximity to, every post fence, and for this reason; wherever post holes retain water, they are sure to be heaved by frost, and the fence thrown out of shape; and the posts can not last so long, where they are alternately subjected to water-soaking and drying. But if all the water which falls, passes immediately down into the ditch, it can not lie in contact with the posts long enough to soak them, and, as a consequence, they must remain perpetually dry, and last for a long period.

PROTECTION AGAINST LIGHTNING.

The theory of a thunder-storm, and of the principles involved in the construction of lightning conductors, is simple, and ought to be fully understood by every intelligent person.

Lightning, or electricity, obeys one unvarying law. It uniformly follows the best continuous conductor, and no conductor can be considered good unless it is continuous. Abundant evidence of this is afforded by the use of broken or otherwise defective lightning rods. The lightning takes the rod and follows it to where the break exists; then finds its next best conductor within the building, in close proximity to the break, crashes through the wall, perhaps where the family are sitting, and deals death around it, finding its way into the earth by tortuous channels — the stove-pipe, the gas-pipes, or, in their absence, shattering the wood-work and plastering. Defective rods of any kind are mere traps for bringing lightning into a house, instead of keeping it out. They are the most dangerous fixtures a family can have about them; and although it is not unfrequently stated in the public prints, or otherwise, that houses provided with rods are struck by lightning and damaged, yet it may be certainly assumed, that in every such instance the rod was out of order, or put up improperly. The principle of protection developed by Franklin, remains sound; and all that is necessary to secure a perfect immunity from danger from lightning, is a strict adherence to what we know it demands as a condition of safety.

The following rules, prepared (in the main) by Prof. Joseph Henry, of the Smithsonian Institution, Washington, embrace a nearly complete summary of directions for constructing and erecting lightning rods.

1st. The rod should consist of round iron, of not less than three-fourths of an inch in diameter. A larger size is preferable to a smaller one. Iron is preferred because it can be readily procured, is cheap, a sufficiently good conductor, and when of the size mentioned can not be melted by the discharge from the clouds. Galvanized iron is preferable, as it is not liable to oxydation. Lightning conductors are frequently constructed in this country with points projecting at intervals of two or three feet through their whole length; this plan has been adopted from some erroneous idea in regard to the action of the conductor, and of the proper application of points. The essential office of the conductor is to receive the discharge from the cloud, and to transmit it with the least resistance possible, silently and innoxiously, to the great body of the earth below, and any thing which militates against these requisites must be prejudicial. Now, in the

passage of the electricity through the conductor, it retains its repulsive energy, and hence each point along the rod in succession becomes highly charged, and tends to give off a spark to bodies in the neighborhood. Besides this, the irregularity in the motion of the electricity which is thus produced, must, on mechanical principles, interfere with its free transmission. The points along the course of the rod should, therefore, be omitted, since they can do no possible good, and may produce injury.

2d. The rod should be, through its whole length, in perfect metallic continuity; as many pieces should be joined together by welding, as practicable, and when other joinings are unavoidable, they should be made by screwing the parts firmly together by a coupling ferule, care being taken to make the upper connection of the latter with the rod water-tight, by cement, solder, or paint.

3d. To secure it from rust, the rod should be covered with a coating of black paint.

4th. It should be terminated above, with a single point, the cone of which should not be too acute. Some persons prefer to incase the point or tip of a lightning conductor with platinum or gold. To this plan there is no objection, but it should not be regarded as an essential. The main purpose of the platinum or gold points, is to prevent oxydation. But the point of a lightning rod, rarely or never oxydates. Its exposure to the air causes it to dry rapidly; and if galvanized iron be used, it will stand for centuries uninjured.

5th. The shorter and more direct the rod is in its course to the earth, the better. Acute angles made by bending in the rod and projecting points from it along its course, should be avoided.

6th. A rod should be fastened to the house by iron eyes, or staples, and may be insulated by cylinders of glass. These latter are, however, of little importance, and may be regarded as involving a useless expense. No flash will quit a properly constructed rod, because lightning never avoids a good conducting medium to follow a bad one. Hence, the rod being continuous, and the staple not so, iron staples are entirely safe. An explosion will shatter glass ones into fragments, and the sleet and ice of winter will, as certainly, destroy them. As few thunder-clouds pass over without discharging their watery contents, the glass insulators become wet, and while in that condition are as good conductors as the iron staples.

7th. The rod should be connected with the earth in the most perfect manner possible; and in cities nothing is better for this purpose than to unite it in good metallic contact with the gas mains or large water pipes in the streets; and such a connection is absolutely necessary, if the gas or water pipes are in use within the house. This connection can be made by soldering to the end of the rod a strip of

copper, which, after being wrapped several times around the pipe, is permanently attached to it. Where a connection with the ground can not be formed in this way, the rod should terminate, if possible, in a well always containing water, and where this arrangement is not practicable, it should terminate in a plate of iron or some other metal buried in the moist ground. It should, before it descends to the earth, be bent so as to pass off nearly perpendicular to the side of the house, and be buried in a trench surrounded with powdered charcoal.

8th. The rod should be placed in preference on the west or north-west side of the house, as most thunder-storms, in the northern part of the United States, come up from the north-west; and it is well to erect the conductors on those points of the building with which the cloud will first come in contact, as every thunder-cloud is surrounded by an electric atmosphere, which precedes the cloud itself. This may be easily verified, by placing the knuckle to the conductor, as the cloud approaches. Sparks will frequently be drawn from it while the thunder yet rolls in the distance, showing that the electrical haze has already enveloped the building, and that the rod is silently conducting the fluid into the earth. In fact, it is performing its functions with the mere electrical atmosphere, just as it would seek to do if assailed by an explosion from the cloud. It is also deemed advisable to erect the rod against the chimney from which a current of heated air ascends during the summer season.

9th. In case of a small house, a single rod may suffice, provided its point be sufficiently high above the roof, the rule being observed that its elevation should be at least half of the distance to which its protection is expected to extend. It is safer, however, particularly in modern houses in which a large amount of iron enters into the construction, to make the distance between two rods less than this rule would indicate, rather than more. Indeed, there is no objection to an indefinite multiplication of rods to a house, provided they are all properly connected with the ground and with each other. A building entirely inclosed, as it were, in a case of iron rods so connected with the earth, would be safe from the direct action of the lightning.

10th. When a house is covered by a metallic roof, the latter should be united, in good metallic connection, with the lightning rods; and in this case the perpendicular pipes conveying the water from the gutters at the eaves, may be made to act the part of rods by soldering strips of copper to the metal roof and pipes above, and connecting them with the earth by plates of metal, united by similar strips of copper to their lower ends, or better, with the gas or water-pipes of the city. In this case, however, the chimneys would be unprotected,

and copper lightning rods soldered to the roof, and rising a few feet above the chimneys, would suffice to receive the discharge. We say soldered to the roof, because if the contact was not very perfect, a greater intensity of action would take place at this point, and the metal might be burnt through by the discharge, particularly if it were thin.

11th. As a general rule, large masses of metal within the building, particularly those which have a perpendicular elevation, ought to be connected with the rod.

The foregoing rules may serve as general guides for the erection of lightning rods on ordinary buildings, but for the protection of a large complex structure, consisting of several parts, a special survey should be made, and the best form of protection devised which the peculiar circumstances of the case will admit.

Franklin has given some precepts for the use of such persons as, during thunder-storms, are in houses not provided with lightning conductors. He recommends them to avoid the neighborhood of fireplaces. Lightning does indeed often enter by the chimney, on account of the internal coating of soot, which is one of the bodies for which, as for metals, lightning evinces a preference. For the same reason, avoid, as much as possible, metals, gilding, and mirrors, on account of their quicksilver. The best place is in the middle of the room, unless, indeed, there should be a lamp or chandelier hanging from the ceiling. The less the contact with the walls or floor, the less the danger. A hammock suspended by silken cords in the middle of a large room, would be the safest place. In the absence of means of suspension, the next best place is on substances which are bad conductors, such as glass, pitch, or several mattresses. These precautions must be supposed to diminish danger; but they do not altogether remove it. There have been instances of glass, pitch, and several thicknesses of mattresses being traversed by lightning. It should also be understood, that if lightning does not find, round a room, a continuity of metal which it may follow, it may dart from one point to another diametrically opposite, and thus encounter persons in the middle of the room, even if they are suspended in hammocks. If out of doors, during a thunder-storm, it is prudent to avoid trees and elevated objects of every kind, which the lightning would be likely to strike in its passage to the earth. A stream of water, being a good conductor, should be avoided. In all cases, the position of safety is that in which the body cannot assist as a conductor to lightning.

The apprehension and solicitude respecting lightning are proportionate to the magnitude of the evils it produces, rather than the frequency of its occurrence. The chances of an individual being

killed by lightning are infinitely less than those which he encounters in his daily walks, in his occupation, or even during sleep from the destruction of the house in which he lives, by fire.

DANGER FROM COPPER COOKING UTENSILS.

The precise danger from the use of copper cooking utensils imperfectly tinned, is far from being generally understood. It appears that the acid contained in stews, as lemon-juice, though it does not dissolve the copper by being merely boiled in it a few minutes, nevertheless, if allowed to cool and stand in it for some time, will acquire a sensible impregnation of poisonous matter, as verdigris, or the green band which lines the interior of the vessel. Dr. Falconer has observed that Syrup of Lemons boiled fifteen minutes in copper or brass pans, did not acquire a sensible impregnation; but if it was allowed to cool, and remain in the pans for twenty-four hours, the impregnation was perceptible even to the taste, and was discovered by the test of metallic iron. This fact has been further confirmed by the researches of Procet, who states that in preparing food or preserves in copper, it is not until the fluid ceases to cover the metal, and is reduced in temperature, that the solution of the metal begins. Unctuous, or greasy solutions, are most liable to become impregnated with poisonous verdigris, if left long in untinned brass or copper vessels. Sir Humphrey Davy asserts that *weak* solutions of common Salt, such as are daily made, by adding a little Salt to boiling Vegetables, and other eatables in our kitchens, act powerfully on copper vessels; although *strong* ones do not affect them.

GLASS BROKEN BY HOT WATER.

No person would be so indiscreet as to hazard the breaking of glass by pouring hot water upon it, if he but understood the simple means of accounting for its destruction. It is as follows: "If hot water be poured into a glass with a round bottom, the expansion produced by the heat of the water will cause the bottom of the glass to enlarge; while the sides, which are not heated, retain their former dimensions; and consequently, if the heat be sufficiently intense, the bottom will be forced from the sides, and a crack or flaw will surround that part of the glass by which the sides are united to the bottom. If, however, the glass be previously washed with a little warm water, so that the whole is gradually heated, and therefore gradually expanded, then the hot water may be poured in without danger; because, although the bottom will expand as before, yet the sides also enlarge, and the whole vessel undergoes a similar change of heat."

SANITARY INSTRUCTIONS.

THE instructions, reprinted herewith, were issued by the State Board of Health of the State of New Jersey, and furnish in a condensed form the precise information which should be at hand for all householders. They not only talk about what should be done, but tell how to do it.

I. *Look to the Condition of your House.*—Begin at the cellar or basement. Have nothing there that can decay or that causes foul odors. If damp, let in air or sunlight, or drain the surroundings, if needed. If by cleansing, by whitewash, or by repeated airing, there is not agreeable air, speedily use some of the disinfectants recommended.

II. *Look to the Kitchen.*—Let all sinks be kept sweet by scrubbing, by hot water poured down each day, or by use of disinfectants, if needed. If outside there is an opening to the air, so that the kitchen sink is not the chief air-outlet to a cesspool or sewer, so much the better. Be careful that all slops or offaling from kitchen or laundry work is soon conveyed away or disinfected at once, and not made to become a part of any heap or mass of impure matter. Cleanness cannot come out of uncleanness. Such things rapidly vitiate air, and discomfort, sickness, or death result. Dirty water of any kind is even worse than dry filth. Secure cleanliness if you would secure health.

III. *Have the Dwelling and Sleeping Rooms well Aired each day.*—Closed closets, unshaken bed-clothing, windows open and curtains down, will not secure rooms fit to live in or sleep in. Flush the room with air, and let this, with sweeping and dusting, remove the organic particles, which otherwise constantly accumulate and cause foulness. Chamber-slops and wash-water are very innocent if cared for within six hours; but soon after decompose, and in sickness or very hot weather sometimes sooner. If there are water-closets or stationary wash-basins in your house, be sure that they are not the foul-air inlets to outside cesspools or sewers. Have good traps, good outside ventilation, good caution as to smells, and use disinfectants for temporary purposes until you can remedy radical defects. Look to unoccupied rooms and the attic, so that all may be dried and well aired, and that you may secure as much coolness and ventilation above you as possible, and not have an unventilated hot-air chamber near the roof.

IV. *Know as far as you can that your Water and Ice Supply is Pure.*—Use no water from wells where surface soil is foul or where organic matter can reach, or from cisterns exposed to foul air, as water will absorb foulness. If the water has any odor while heating in a glass tube, or if it becomes turbid or emits odor on being shaken, after being kept a day in a long glass bottle, half full and corked, at once suspect it. If you must use it, have it boiled, and when cool, air it by pouring from one pitcher to another, and use it thus until you can be satisfied as to the purity.

V. *See that the Food Supplied for your Family is in Proper Condition before Cooking, aad that it is Prepared in a Wholesome Way.*

VI. *Look to the Out-door Part of your Home, and see that it is kept in Proper Order, that no Water or Decomposing Matters are thrown upon it.*—If there is a cesspool, it must not smell, where it is disconnected with the house or has access to the air. If it does, it must be disinfected until radical change can be made. If there is an ordinary out-door privy, have free access of air to it and exclusion of all slop or rain-water from it. If there is odor from it, use odorless disinfectants until it is corrected. If too foul for use, cover it over with "calx powder" and have under the seats some receptacle—such as the patent pail or a half-barrel or tub—which can be frequently removed and alternately replaced by another. A privy built above ground, with water-tight receptacle, by the use of dry earth, powdered wood-charcoal, dry sifted ashes, and occasional copperas-water, is easily kept neat and clean, if cleansed each spring and fall. Country homes need inspection and circumspection. Their sanitary care is often greatly neglected by nice people.

VII. *Insist that your Town, if you live in one, have thorough Sanitary Inspection.*—Where persons are housed closely to each other, there cannot but be evils, from which the community has a right to be protected, and yet from which each one

cannot protect himself. There will be householders who, from thoughtlessness, ignorance, or poverty, do not secure for themselves or for others the needed sanitary conditions. Charity, the public welfare, and the necessary incidents of city life require regulated and definite provision against all those nuisances which imperil the life and health of the populace. Insist upon systematic prevention, instead of waiting for that loss which disease always involves when it is artificial or when we are compelled to meet an epidemic hurriedly. If your authorities do not act, move by voluntary associations, which shall exhibit the facts and so compel action. There is no waste so great as that of preventable disease, which disables not only the sufferers, but puts a tax on labor, capital, and life, much more direful than a well-directed expenditure to prevent it. Epidemics are to be dreaded; but our greatest losses are from a chronic death and sickness rate, which has a permanent base of supply in prevalent unsanitary conditions, not prevented, not remedied, as they should be and can be. Public health is common wealth. Can you not do something to reduce the tax levy which forced diseases impose upon the citizens of your city, township, and State? To the degree that sickness and invalidism is unnecessary, it means hard times and ill-content. Every motive of comfort and interest requires that we plan to prevent all those ailments which are within the range and duty of our control.

Disinfectants, and How to Use Them.—Drafts of air for all floating foulness; dry rubbing for all easily detached foulness; wiping and water scrubbing for all attached foulness in most cases admit of no effective substitution. Submersion in boiling water is applicable to the cleansing of all garments, utensils, etc., admitting of such a method; and dry boiling heat or freezing cold will also neutralize infective particles. To disinfect a room, ship, or building, so needing disinfection that its contents and surfaces cannot be easily dealt with singly, close the room or building—its windows, doors, and chimneys—so as to exclude the outer air as far as possible. Vacate the house. Break roll sulphur in small pieces, place it on an iron plate or other metallic dish, and set this on a pair of tongs or other cross-bar over an iron pot in which there is water, or over a large box of sand, so as to avoid danger of fire from small particles of burning sulphur. Light it by a few hot coals, or some alcohol poured around the sulphur and lighted. Then leave, and shut the door after you. A pound and a half of sulphur is sufficient for 1,000 cubic feet of space. The sulphur will convert all the oxygen of the air into sulphurous acid, and all organic particles are likely to be changed. Keep closed three hours after the burning has ceased, and then air well six hours before occupying. Clothing and bedding needing disinfection may be hung on lines and left in the room. Most furniture is not permanently injured, but needs dry wiping and then washing off afterward.

Chloride of Lime.—A valuable disinfectant, chiefly because it contains from 30 to 35 per cent. of chlorine, which is liberated under proper methods of use. If purchased for cities, it should be tested as to the amount. It is not overrated as a disinfectant if only its quality is known and its mode of use is judicious. It needs slight moistening, frequent stirring, and sometimes the addition of an acid, as vinegar or common spirits of salt. The test of its efficiency is that the odor of it be kept constantly perceptible.

Chlorinated Soda, usually known as Labarraque's Solution, is a convenient liquid preparation, valuable for use in saucers in the sick-soom or in utensils. Its odor should be perceptible to strangers entering.

Lime, Plaster, Charcoal, Dry Earth, Sifted Ashes.—All these have value, chiefly to be tested by the rapidity with which they correct odors. Fresh-slaked lime should be scattered in all places of foul odor. It or charcoal or plaster may be scattered over heaps emitting foul odors. Calx powder is made by pounding one bushel of dry fresh charcoal, and two bushels of stone lime, and mixing them, and is of great practical use. All these substances absorb foul gases, and dry up moisture, and so help to retard decomposition or else absorb its results. Where lump charcoal is used, it may be refitted for use by reheating it. Quicklime and ground plaster should not be used where they may be washed into pipes and form lime-soap or obstruct by hardening.

The Metallic Disinfectants.—Sulphate of iron (copperas or green vitriol), two pounds to a gallon of water, to be sprinkled freely in drains, cesspools, privy-closets, soiled vessels, or heaps of decaying matter which cannot be removed at

once. One-half of the strength will do here where it is to stand in contact with surfaces or in spittoons, water-closets, house-vessels, or vaults. One-half pound of sulphate of iron (green vitriol), or one ounce of sulphate of zinc (white vitriol) or one ounce of sulphate of copper (blue vitriol), or one ounce of chloride of zinc (butter of zinc), or one ounce of chloride of lime (bleaching powder), put to a quart of water—any one of these is available for neutralizing discharges or for sinks, used in quantities sufficient to cover the bulk they are intended to disinfect. Soiled garments may be put to soak in a half pound of sulphate of zinc (white vitriol) to three gallons of water. It will not stain or discolor most fabrics. One ounce of chloride of lead dissolved in a pint of hot water, and then a pailful of water added, into which a handful of common salt has been thrown, serves a similar purpose. Also a half ounce of permanganate of potash to a gallon of water. For washing, soiled garments should be put in boiling water, unless the character of the fabric forbids it. Powdered borax, one-quarter of a pound to a gallon of water, is a good cleanser of clothing. Soiled hair, brushes etc., are cleansed by it. Chloride of zinc, one-quarter of a pound to a gallon of water, does not stain or discolor fabrics. Parkes recommends two ounces of chloride of lime or one ounce of sulphate of zinc, or one-half of a fluidounce of chloride of zinc to be added to each gallon of the boiling water in which the garments are thrown. On clothing that cannot be washed, and does not need to be burned, after thorough shaking and airing, the sulphate of zinc or chloride of zinc solution may be sprinkled. For general disinfection the following compound is available and valuable, and far better than most of the patented articles offered: Sulphate of iron (copperas), forty pounds. Sulphate of lime (gypsum or plaster), fifty pounds. Sulphate of zinc (white vitriol), seven pounds. Powdered charcoal, two pounds. Mix well and scatter dry, or wet it in small quantities and make into balls ready for use. Where a liquid is needed, stir in water in the proportion of a pound of the powder or ball to a gallon of water, and sprinkle where needed.

Carbolic Acid is valuable as an out-door disinfectant, to be added to the sulphate-of-iron solution, or used separately. Because of its own odor, we cannot well test its effect in correcting other smells. We would test specimens, or use only Squibbs's Liquid, No. 1, because sure of its strength to be diluted by adding from fifty to one hundred parts of water, according to the mode of its employment. It is seldom required, if the other articles named are properly used. Carbolic acid and chloride of lime must not be used together. Remember that we do not know that any chemical disinfectants destroy the germs of a disease. They only neutralize or suspend the action of those artificial disease-producers or fertilizers which the bad administration of cities, or householders, or interference with natural laws, or neglect of cleanliness has provided. We are to rely on these palliatives or correctives only while we are preparing for radical methods of prevention.

N. B.—The only reason why the death rate of your city or your township is over 15 to the 1,000, or why the sickness and invalid rate is a large multiple of this, is because you are the victims of nuisances which admit of abatement.

Present Wholesale Prices of Disinfectants.—Sulphate of Iron (Copperas, Green Vitriol), 1½ cents per pound. Sulphate of Zinc (White Vitriol), 6 cents. Chloride of Lime (in bulk), 2 cents per pound; in packages, 6 cents. Sulphur Roll, 2½ cents per pound. Carbolic Acid (No. 1 Squibbs), 30 cents per pound. Zinc and Carbolic Acid, disinfectant of New York Board of Health, 40 cents per gallon. Permanganate Crystals, $1.10 per pound. 50 per cent. solution Chloride of Zinc, 25 cents per pound. Solution of Chlorinated Soda (Labarraque's), 10 cents per pound.

HINTS ON THE USE OF GAS.

Waste of Gas. — The difference in the amount of gas consumed between different localities, depends on the pressure used at the works to force the gas to flow through the delivery pipes. A burner which, under the pressure of half an inch, consumes $4\frac{1}{2}$ cubic feet of gas per hour, will, under the pressure of $1\frac{1}{2}$ inches, consume in the same time six cubic feet of gas. Under great pressure the flame rises higher, whereas, if it burns sluggishly, the particles of carbon are held for a greater period of time suspended in the flame, and the gas is burned to better advantage. Again, there is a waste from keeping burners too long a time in use, as the longer a burner is used the more gas is consumed.

Escape of Gas into Apartments.— The most ordinary degree of care and observation, are sufficient to guard against the escape of gas. When that happens, whether by mistake, neglect, or defect in the pipes or fittings, it is easily remedied. The odor of gas is so unlike every other, constituting one of its most valuable properties, that it can be instantly detected, traced to its source, and immediately prevented. When an escape of gas is suspected, or known to exist, open the door and window of the room, and search for it immediately; but do not use a lighted candle or ignite a match, until the room has been thoroughly ventilated.

Smoke from Gas Lights. — It is pretty generally imagined that the smoking of ceilings is occasioned by impurity in the gas, whereas, in this case, there is no connection between the deposition of soot and the quality of the gas. The evil arises, either from the flame being raised so high that some of its forked points give out smoke, or, more frequently, from a careless mode of lighting. If, when lighting the lamps, the stop-cock be opened suddenly, and a burst of gas be permitted to escape before the match be applied to light it, then a strong puff follows the lighting of each burner, and a cloud of black smoke rises to the ceiling. This, in many houses and shops, is repeated daily, and the inevitable consequence is, a blackened ceiling. In some well regulated houses, the glasses are taken off and wiped every day, and before they are put on again the match is applied to the lip of the burner, and the stop-cock cautiously opened, so that no more gas escapes than is sufficient to make a ring of the flame; the glasses being then put on quite straight, the stop-cocks are gently turned until the flames stand at three inches high. When this is done, few chimney glasses will be broken, and the ceilings will not be blackened for years.

Heat from Gas Lights.— An uncomfortable degree of heat is

sometimes complained of, as one of the results of lighting a room with gas. It should, however, be remembered, that the quantity of heat emitted by lamps, candles, and gas lights, is, in practice, very nearly in proportion to the quantity of light obtained. It matters not, therefore, what means are employed, or materials used, in procuring light; for if a certain quantity be considered necessary, and there be more at one time than another, or by using gas instead of candles, the quantity be permanently increased, the heat diffused throughout the apartment must necessarily be increased in the same proportion. It must also be understood, that the products of combustion are precisely the same, in their chemical constitution, whether the light-giving material be wax, tallow, oil, or gas.

But how happens it that a room once considered so comfortable, when lighted with candles, should all at once become so oppressively warm when lighted with gas? This is a question not very difficult to answer. We will suppose that in the room referred to, on ordinary occasions, there had probably been two candles or lamps used. On special occasions, the number might have been increased to four. Now gas-light is introduced, and the usual habits of prudence and economy in the use and management of light, seem to be entirely forgotten. Gas being much cheaper than candles, the light more agreeable, and the quantity so easily increased, all the thoughts are absorbed in lighting the room effectively. If only one gas-burner be used — and that, perhaps, may not be the proper form and size adapted to the room — it is likely that in the first experience of a good light, the quantity may be equal to that derived from eight, ten, or even twelve candles. If two burners instead of one are used, and of less size, it is not likely there will be less light than from eight or ten candles. In the case here described, is it wonderful that the room should be uncomfortably warm? What is to be done? Be more economical of light. Obtain the advice of those whose knowledge and experience may be relied on, and, following their directions, use suitable burners and glasses, admit a continuous supply of fresh air to the room, and adopt some efficient mode of ventilation. All will then go on well. Every room and passage in the house might be properly, that is, effectively lighted, and there need be no waste of gas, no excess of light, no uncomfortable degree of heat, and, what is likely to be of greater importance, no cause of complaint about expense. These conditions imply good management, by which is meant just the same amount of care and watchfulness as are usually exercised over other domestic arrangements.

How to Read the Meter. — Every family which buys gas of a company, should know how to read the meter, which determines the amount of gas consumed. On opening a small door there are exposed

three faces, like those of a watch, but figured only to ten, with an index on each. The right hand dial expresses hundreds, that is, if the index points to 3 it means 300. The figures of the middle dial express thousands, and if it points to 3, or between 3 and 4, means 3,000. The figures of the left hand dial express tens of thousands. These must be read *by the last figure which each index has passed.* If the indexes of all the hands are between 3 and 4, it must read 30,000, 3,000, 300, or 33,300. If the left hand index is at or past 5, the middle one at or past 6, and the right hand index at or past 7, it should read 56,700. When the monthly entry is made, as a basis of charge, this sum is to be subtracted from the record for the preceding month, which must, of course, be preserved, and this shows the amount consumed meanwhile, and to be charged.

PHYSICAL DEVELOPMENT AND CULTURE

IN

SWIMMING, ROWING, RIDING, WALKING, RUNNING, LEAPING, CLIMBING,

AND OTHER

GYMNASTIC EXERCISES.

DISEASE FROM ATHLETIC STRAIN.

ATHLETIC exercises, in themselves exceedingly useful when practiced in moderation, often cause great danger to health. Even where the training includes the development of the whole body, extreme training may produce a strain and lead to ultimate degeneration of a very serious nature. We see this in men who, at great self-sacrifice, are artificially brought up to what is called perfection of work and endurance, as well as in men trained to prize-fighting, rowing, running, foot-ball and the like. Not infrequently in a short time after what is called complete training has been attained, there is derangement in the body, one part has failed while another retains full power. One organ does not balance with the others, which means, virtually, disease. This was shown in the fatal illness of Heenan, the celebrated prize-fighter. In him, systematized over-training destroyed the harmony of organic action. With deficient assimilation his circulation became embarrassed, and the man broke up.

The game of foot-ball violently carried out leads to many dangers from muscular over-work and strain. Perhaps more than any other game it leads to direct physical accidents from kicks, falls and concussions. Beside these, there is in the sudden cessation from running, made in order to kick the ball, very great danger because of the tremendous strain thrown immediately upon the heart, and under which that organ is for a moment checked in its beat. The worst forms of heart disease I have ever seen, caused by athleticism, have sprung from this exercise.

B. W. RICHARDSON, M.D., F.R.S.

PRELIMINARY.

THE distinguished author of the treatise on Domestic and Sanitary Economy in his preliminary remarks used these words, "if it is desirable to know how to *cure* disease, it is much more important to know how to *prevent* it;" the same idea is strikingly prominent in every part of this volume.

To prevent disease and keep the human body in health, it must be *active;* activity is the law of life; stagnation is death. The first essential for a healthy human life is *pure air*, and the second is *pure water;* both of these a kind Providence has furnished, without measure, in bounteous profusion. Wherever found, these great elements are *active*. Let either stagnate, and it becomes *impure*, and its direct influence is to produce disease, and consequently death.

Physical growth and development in the young, in large measure, is the result of activity, of *exercise:* naturally they are restless; instinctively they bring all the muscles of the system into action; but the restraints and requirements of modern civilized life lead many into sedentary pursuits, and *all*, or *nearly* all, drop into grooves or ruts, in which they run the daily round of their lives, without recognizing the necessity which exists for giving to each muscle a due amount of exercise, thus to attain to the harmonious development of the Physical Man.

Much has been said in this work about food and clothing, air and water, and the ways that men should use them for the promotion of health. We have had dissertations upon sleep, and the need all have for *exercise;* but we have not been taught how to become agile, fleet, or spry, or the scientific modes to reach these and still greater athletic accomplishments.

To secure a well rounded manhood and afford the greatest amount of good, exercise should be *systematized*, and regularly sought, if possible, each day in the open air; we therefore bring our readers well considered lessons in Gymnastics, in Walking, Riding, Rowing, Swimming, etc., etc., which we trust will be used, and afford Amusement and Recreation, and restore, or render permanent, robust health.

GYMNASTICS.

INTRODUCTION.

THE study of Gymnastics is of the utmost importance to young persons, as its object is to call into exercise, and to train to perfection, all the corporeal or bodily powers. It is the education of the limbs, joints, and muscles; and includes not only the systematic training of these, but also assists the sciences of riding, driving, rowing, swimming, etc.

In the following gymnastic exercises we have determined to introduce only those more simple and useful feats which may be said to make up the "Alphabet of the Science," and all the individual and progressive exercises are susceptible of being everywhere introduced. They may be performed in very small spaces, and require no particular preparation, expense, or place. By attention to the directions any young pupil may train and exercise himself, and a number of others younger than himself; and this excellent study may thus become a source of amusement and delight.

HISTORICAL MEMORANDA.

The first gymnasium is said to have been established at Sparta, and some years afterward at Athens. In the former city the exercises partook of a rude military character; but among the Athenians, who were always disposed to mingle the elements of the beautiful in whatever they undertook, gymnastics were refined, and the Gymnasia became temples of the Graces. In each there was a place called Palæstra, in which wrestling, boxing, running, leaping, throwing the discus, and other exercises of the kind were taught. Gymnastics were afterward divided into two principal branches — the *Palœstræ*, taking its name from the Palæstra, and the *Orchestræ*. The former embraced the whole class of athletic exercises; the latter dancing, and the art of gesticulation and declamation.

The Gymnasia were spacious edifices, surrounded by gardens and a sacred grove. Their principal parts were: 1. The Portices, furnished with seats and side buildings, where the youths met to converse. 2. The Ephebeion, that part of the edifice where the youth alone exercised. 3. The Apodyterion, or undressing room to the Conisterium, or small court in which was kept the yellow kind of sand sprinkled by the wrestlers over their bodies after being anointed with the aroma, or oil tempered with wax. 4. The Palæstra properly was the place for wrestling. 5. The Sphæristerium, where the game of ball was played. 6. Aliterium, where the wrestlers anointed themselves with oil. 7. The Area, or great court, where running, leaping, and pitching the quoit were performed. 8. The Xysta, open walks in which the youths exercised themselves in running. 9. The Balanea, or baths. Behind the Xysta lay the Stadium, which, as its name imports, was the eighth of a mile in length; and in this were performed all sorts of exercises, in the presence of large numbers of persons and the chiefs of the state.

To all these branches of gymnastics the Grecian youth applied themselves with

peculiar eagerness, and on quitting the schools devoted to them a particular portion of their time, since they regarded them as a preparation for victory in the Olympic and other games, and as the best possible means for promoting health and ripening the physical powers; nor could anything be better adapted for those whose heroism was liberty, and whose first great aims were to be good citizens and the defenders of their country.

The Romans never made gymnastics a national matter, but considered them merely as preparatory to the military service; and, though forming a part of the exhibitions at festivals, they were practiced only by a particular class trained for brutal entertainments, at which large bets were made by the spectators, as is still the custom at our own races: but when all the acquisitions of the human intellect were lost in the utter corruption of the Roman empire and the irruptions of wandering nations, the gymnastic art perished.

MODERN GYMNASTICS.

The commencement of tournaments during the Dark Ages in some degree revived athletic exercises; but the invention of gunpowder, the use of the small sword, the rifle, and scientific tactics, by which battles were gained more by skill than force, kept down the training of the body for athletic feats. But in the last century, when men broke loose from the yoke of authority, and education began to be studied, it was found that physical education had been forgotten. Salzmann, a German clergyman, invented a system of physical exercises, principally confined to running, leaping, swimming, climbing, and balancing; and at the commencement of the present century a German of the name of Volker established the first gymnasium in London, while Captain Clias, a Swiss, established one in the Royal Military Asylum; and since then many of the best schools and colleges have a gymnasium attached to their establishments.

It generally happens that the pupils of a gymnasium, after a time, lose their interest in the exercises. The reason of this appears to be that little or no difference is made in the exercises of different ages, and it is natural that an exercise repeated for years should become wearisome. Gymnastics, therefore, when they are taught, should be divided into two courses. In the first course we would include walking and pedestrian excursions, elementary exercises of various tests, running, leaping in hight, in length, in depth, leaping with a pole (in length and hight), vaulting, balancing, exercises on the single and parallel bars, climbing, throwing, dragging, pushing, lifting, carrying, wrestling, jumping (1, with the hoop; 2, with the rope), exercises with the dumb bells, various gymnastic feats or games; and, lastly, swimming, skating, fencing, riding on horseback, rowing, etc.

Gymnastic exercises may be begun by a boy of about eight years of age, or may be commenced at any age; but in all cases he should begin gently, and proceed gradually, without any abrupt transitions. They should be commenced before breakfast in the morning, or before dinner or supper; but never immediately after meals: and the pupil should be very careful, after becoming heated by exercises, of draughts or cold, and especially refrain from lying on the damp ground, or from standing without his coat or other garments; and rigidly guard against the dangerous practice of drinking cold water, which, in many instances, has been known to produce immediate death.

WALKING.

In all gymnastic exercises walking, running, and jumping deserve the preference, because they are the most natural movements of man, and those which he has most frequent occasion to use. This exercise, within the reach of everybody, ought to be

considered one of the direct conservators of health, having the most important beneficial effects upon our mental and moral economy. Walking provokes appetite, assists digestion, accelerates the circulation, brings the fluids to the skin, strengthens the memory, and gives cheerfulness to the mind, and in fatiguing the limbs, gives repose to the senses and the brain.

It might be supposed that every one knows how to walk: not so, however; some persons crawl, some hobble, some shuffle along. Few have the graceful noble movement that ought to belong to progression, or, however well formed, preserve a really erect position and an air of becoming confidence and dignity. To teach walking — that is to teach young persons to walk properly — we should advise a class of them to unite, and teach themselves, which they may readily do if they follow the instructions given below.

A company of boys being formed, the eldest, or the one best adapted to the task, should act as captain, and at the word of command, "Fall in," all the boys are to advance on the same line, preserving between each the distance of an arm's length. At the word "Dress" each boy places his right hand on the left shoulder of the next, extending his arm at full length, and turning his head to the right. At the word "Attention" the arms fall down by the side, and the head returns to the first position. The captain should now place his little regiment in the following manner:— 1. The head up. 2. The shoulders back. 3. The body erect. 4. The stomach in. 5. The knees straight, the heels on the same line. 6. The toes turned very slightly outward. The captain now stands before his men, and advancing his left foot, his knee straight, and his toe inclined toward the ground, he counts one, two, placing his boot on the ground, the toe before the heel; he then directs his pupils to obey him, and to follow his motions, and says, "March," when each foot is advanced simultaneously, till he gives the word "Halt." He then makes them advance, wheel to the right and left, in slow time, quick time, always observing the position of the body, and requiring that they move all together.

THE TIP-TOE MARCH.

This movement is preparatory to running and jumping. The boys being in line, the word "On tip-toes" is given: each boy places his hands on his sides, and waits for the word "Rise;" when they all gently raise themselves on their toes, joining their heels together, and keeping the knees straight, remain in this position till the word "Rest" is given, when they fall back slightly on their heels, their hands at the same time falling down by their sides. Proceeding in this manner through a few courses, with such changes as may present themselves, the pupils will soon acquire a habit of graceful walking, of the highest importance to every one who studies a gentlemanly bearing.

RUNNING.

Running is both useful and natural; it favors the development of the chest, dilates the lungs, and, when moderate, is a highly salutary exercise. To run fast and gracefully one should as it were graze the ground with the feet, by keeping the legs as straight as possible whilst moving them forward. During the course the upper part of the body is inclined a little forward, the arms are as it were glued to the sides, and turned in at the point of the hips, the hands shut, and the nails turned inward. The faults in running are swinging the arms, raising the legs too high behind, taking too large strides, bending the knees too much, and in not properly managing their wind. In all running exercises the young should begin gradually, and never run themselves out of breath at any time. By careful practice a boy may soon acquire the power of running a mile in ten minutes; this is called moderate running: in what

is called prompt running a thousand yards in two minutes is thought very good work and in quick running 600 yards in a minute is considered good. The first distance that children, from eight to ten years of age, may be made to run is about 200 yards; the second, for those more advanced, 300 yards; and the third, for adults, 400 yards. It is, however, most essential that in running boys should not over-tax their strength or "wind." We are not all constituted alike, and a boy who could last for 200 yards or so might injure himself considerably by racing for a mile.

JUMPING.

Of all the corporeal exercises jumping is one of the most useful; and during our lives very many instances occur where a good jump may do us essential service. To jump with grace and assurance one should always fall on the toes, taking care especially to bend the knees on the hips: the upper part of the body should be inclined forward, and the arms extended toward the ground. The hands should serve to break the fall when jumping from a great hight. In jumping we should hold the breath and never alight on the heels. Boys should exercise themselves in jumping, by jumping in length, and jumping from a hight, with attention to the above cautions. They may make progressive exercises in *length* by varying the distance from time to time, and in hight by jumping from a flight of stairs or steps, increasing a step at a time; they will soon be able to jump in length three yards, and from a hight six feet, without injury.

LEAPING.

Leaping is somewhat different from what is called jumping, as the object is to pass over an obstacle. It is of great importance to draw in the breath, as in jumping, while the hands should be shut, the arms pendent, to operate after the manner of a fly-wheel or pendulum. It may be practiced by a leaping stand, which can be easily made of two sticks or stakes sunk in the grouud, in which little catches are made at various distances, on which an even piece may be laid, that may readily be knocked over, so as not to offer resistance to the jumper, and injure him by an ugly fall.

The principal exercises in leaping are: — 1. The high leap without a run. 2. The high leap with a run. 3. The long leap without a run. 4. And the long leap with a run. In the first of these the legs and feet are closed, the knees are bent till the calves nearly touch the thighs, and the arms are thrown in the direction of the leap, which increases the impulse. This leap may be practiced at the following progressive hights, — eighteen inches, twenty-four inches, thirty-two inches, forty-eight inches, which last is, perhaps, what few lads would attain.

The high leap with a run. — The run should never exceed twelve paces, the distance between the point of springing and the obstacle to leap over to be about three-fifths the hight of the obstacle from the ground; and in making it the leaper should go fairly and straightly over without veering to the side, and descend on the ball of the foot just behind the toes. The hights that may be cleared by the running leap vary from three to six feet. A good leaper of sixteen years old ought to leap four feet six inches, and an extraordinarily good leaper five feet. Adults well trained will leap six, and some have been known to leap seven feet.

The long leap without a run. — The long leap may be marked out from four to eight feet, according to the agility and strength of the leaper; and the object to be cleared, a small block of wood, which should not in this kind of leap be more than six inches high, placed midway. In leaping the body is bent forward, the feet are closed, the arms first sway forward, then backward, and then forward at the moment of taking the leap. In this leap, ten or twelve feet is considered good work.

The long leap with a run. — The run should be on firm level ground. The body should be inclined forward, and the run consist of about twelve paces, a small block of wood, as before, being placed mid distance in the leap. The spring should be principally on the right foot, and the arms should be thrown forward at the time of the leap. In descending, if the leap be a very long one, the leaper should descend principally upon his toes; if the leap be not very long, he may descend on the balls of the toes. The leap is considered good if fifteen feet be cleared, but twenty may be done by a good leaper, and one or two individuals have fairly reached twenty-three feet.

Vaulting. — Vaulting is performed by springing over some stationary body, such as a gate or bar, by the aid of the hands, which bear upon it. To perform it, the vaulter may approach the bar with a slight run, and placing his hands upon it, heave himself up and throw his legs obliquely over it. The legs should be kept close together: while the body is in suspension over the bar, the right hand supports and guides it, while the left is free. The vaulter may commence this exercise with a bar or a stile three feet high, and extend it gradually to six feet.

Leaping with a Pole. — A great variety of leaps may be practiced with a pole, which should be of sufficient length, and shod at one end with iron, so as to take hold of the ground. The leaper should grasp with his right hand that part of the pole a little below the level of his head, and with his left that part of it just below the level of his hips; he should then make a slight run, and, placing the pole on the ground, take a spring forward, and swing himself slightly round, so that when he alights the fall may be brought toward the place from which he rose.

The pole is also employed in both long and deep leaps. In both of these the mode of holding the pole is similar; but in leaping from a hight the pole should be grasped at the level of the knee, and then the leaper, with a slight circular swing, should descend on the balls of his toes.

TO CLIMB UP A BOARD.

This should be firmly fixed at an angle of thirty degrees. The climber should seize both sides with his hands, and place his feet in the middle on the soles. This will teach him to hold firm by his hands, and to cling with his feet. As the climber gets used to this exercise, the angle of the board may be increased. The young gymnast can ascend when the plank is perfectly perpendicular. A pole may be mounted in the same manner.

CLIMBING THE POLE.

The pole should be about nine inches in diameter, and firmly fixed in the ground in a perpendicular position. In mounting, the pole is to be grasped firmly with both hands, the right above the left. The legs are alternately to grasp the pole in the ascent by means of the great toe, which is turned toward the pole. In descending, the friction is to be thrown on the inner part of the thighs, and the hands are left comparatively free.

Climbing the mast is similar to climbing the pole; but in this exercise the climber is unable to grasp it with his hands, but holds it in his arms: the position of the legs is the same as for the pole.

CLIMBING THE ROPE.

In climbing the rope, it is firmly grasped by the hands, which are placed one above the other, and so moved alternately. The heels are crossed over the rope, which is held fast by their pressure, the body being supported principally by them.

In the sailor's method the rope passes from the hands round the inside of the thigh, under the knee-joint, over the outside of the leg, and across the instep. But the enterprising gymnast will not be satisfied until he can climb the rope by his hands only, allowing the rest of his body to hang freely suspended.

CLIMBING TREES.

In climbing trees the hands, and feet, and knees, are all to be used; but the climber should never forget that it is to the hands that he has to trust. He should carefully look upward and select the branches for his hands, and the knobs and other excrescences of the trees for his feet. He should also mark the best openings for the advance of his body. He should also be particularly cautious in laying hold of withered branches, or those that have suffered decay at their junction with the body of the tree, in consequence of the growth of moss, or through the effects of wet. In descending, he should be more cautions than in ascending, and hold fast by his hands. He should rarely slide down by a branch to the ground, as distances are very ill-calculated from the branches of a tree.

THE GIANT STRIDE, OR FLYING STEPS, AND ITS CAPABILITIES.

The valuable and invigorating apparatus which is called the Giant Stride in some places, and the Flying Steps in others, is to be found in many schools where an inclosed open-air playground can be secured. Excepting on a few occasions, or when the charm of novelty induces the boys to exercise, it is seldom in much favor, and is usually seen idle, with the ironwork rusting, the beam rotting, and the ropes yielding to exposure.

In fact, it really seems as if the masters and teachers were doing their best to weaken their apparatus, and to cause a severe accident whenever it breaks down, as such is always the case, sooner or later. The rusty iron gives way to a harder pull than usual, the ropes snap, or the upright post breaks off level with the ground, and falls with dreadful force. We knew of a boy being killed by such an accident, and in consequence the parents of the other pupils laid the blame on the Giant Stride itself, instead of on those who allowed it to get into such a state of decay.

Boys, too, soon get tired of it; they take hold of the ropes, run round a few times, and then leave it, naturally, seeing no interest in such a proceeding. But in reality the Giant Stride is a most useful article in muscular education, as it exercises at the same time the arms and legs, is capital for the lungs, and strengthens those invaluable muscles about the loins which we so sadly neglect, and by reason of whose weakness many dangerous injuries occur to young and old.

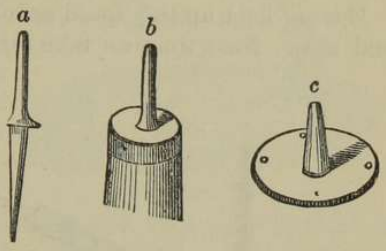
There is something most fascinating in the exercises that can be achieved on this apparatus; the gymnast seems to be almost endowed with wings, and in his aerial course hardly touches the ground with his toes, flying, like feathered Mercury, through the air, and literally basking in the pure element. The common posture of holding the bars close to the breast, and then running round the post, is radically false, and deprives the Giant Stride of all its use, and the greater part of its pleasure. Being ourselves ardent advocates of this instrument as affording an amount of healthy exercise not to be obtained by any other means, we gladly take this opportunity of describing the manufacture and capabilities of the Giant Stride.

Having fixed upon a suitable spot of level ground, well laid with gravel, and carefully drained, dig a hole at least seven feet in depth, and fill about eighteen inches with stones about the size of the fist, or, to use a homely but expressive simile, as if a sack of potatoes had been emptied into it. Pound and press the stones well down, and then pour rough gravel upon them until you have made the surface tolerably

level. The object of these stones is to prevent the water from accumulating round the post and rotting it.

Now for the post. This should be at least twenty feet long, so as to leave about fifteen feet projecting when set upright in the hole. The butt should be left very large, as is done with ordinary wooden gate-posts, and the whole affair ought to be made of thoroughly seasoned wood. Unless this is the case, it is sure to rot, and then down it comes some day, when least expected. Triangular steps should be nailed upon opposite sides, like those on railway signal-posts, as otherwise the daily task of removing and replacing the ropes will be very irksome.

Get a blacksmith to make a stout iron pin, such as is shown at *a*, having a projecting shoulder, to prevent it from entering too far into the wood. He should also make a strong iron collar to put over the top of the pole, as is seen at *b*, where the pin is also shown fixed. The last piece of blacksmith's work is an iron disc, having a cap or thimble in the middle, which is intended to receive the iron pin, and to enable the disc to spin round freely. Four holes are bored through the edge of the disc, as seen at *c*. Purchase four iron S hooks, and the same number of swivels, and good store of well-made half-inch rope, and the machine may then be set up.



First char carefully the whole of the butt that is to enter the ground, and for about six inches above, to prevent the wood from being injured by wet. Place it upright in the hole, testing it by a plumb-line tied to the top, and fill in the hole with earth, pounding it down firmly with a heavy rammer. You cannot be too careful about this process, and the apparatus should not be used until the earth has had time to settle. While waiting for this operation, cut the rope into appropriate lengths, and fasten one end of each rope to a swivel, and the other to the centre of a stout bâton of elm or oak wood, about eighteen inches long. Unless you are very sure of your powers of splicing ropes and making "eyes," let the ropemaker do this for you, as it is a most important operation, and involves the security of the gymnast in no slight degree. It is necessary to have swivels, as the ropes would otherwise become so twisted as to lose their freedom of play, or even to weaken their structure. These preparations being completed, mount the post by the steps, taking the cap with you, grease the pin well with an end of tallow-candle, and slip the cap upon it, taking care to spin it well in order to assure yourself that all is right. Hang the swivels to the circular plate by means of the S hooks, one curve of which passes through the hole in the plate, and the other through the loop in the swivel.

The ropes should be just so long that when they hang loosely along the pole the cross-bar should be two feet from the ground. As, however, new ropes stretch in a wonderful manner, it is needful to allow considerably for this tendency.

One thing more is needed, and then the whole apparatus will be complete. Measure the greatest distance which can be reached by the feet of any one swinging round by the ropes, and about one yard beyond that line erect a slender pole nearly as high as the central post, having pegs driven at intervals of four inches. This is intended to aid the learner in leaping, and the mode by which this object is accomplished is seen in Fig. 1.

Having now everything ready, we first look to all the fastenings, a precaution which must never be neglected; see that the pin and swivels are well greased, take the cross-bar of one rope in both hands, and retire from the post as far as outstretched arms will permit. Of course, if there are four performers, each takes his stand

exactly opposite his neighbor. It is better not to exercise alone, on account of the unequal strain on the post; and it is evident that the opposite players should be as nearly as possible of similar weights, so as to balance each other in their course. It may easily be seen that the strain upon the base of the post is enormous, there being a leverage of fifteen feet, and that precautions are necessary to prevent injury.

Keeping our right sides to the post, and the rope tightly stretched, we begin to run, throwing as much weight as possible on the rope, and as little as possible on the feet. As the pace increases, the feet are taken off the ground, and touch it at longer intervals, until, when at full speed, they only come to the ground occasionally, just sufficient to maintain the impetus.

Having kept up this speed as long as is agreeable, we slacken the pace gradually, and stop. Next time we take care to run the contrary way, keeping the left side

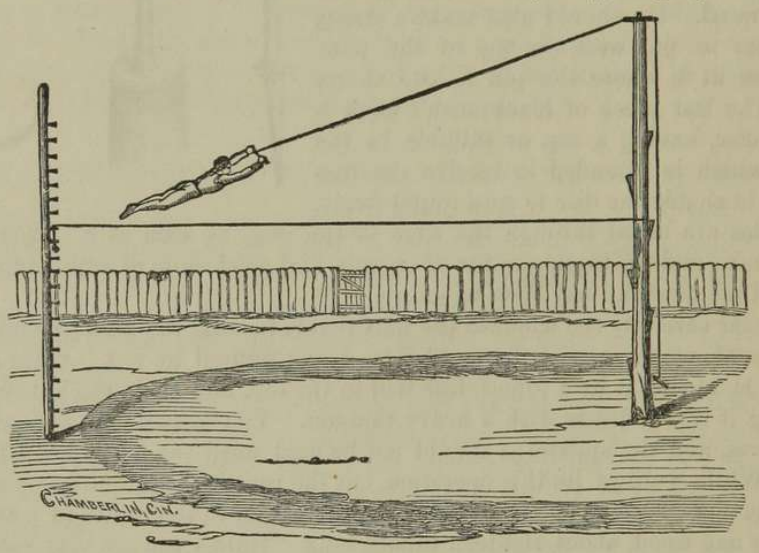


FIG. 1.

toward the pole. This is done to exercise equally the muscular system on both sides of the body; and to save time and space, we will say, once for all, that when any feat is described, it must be accomplished in either direction with equal ease.

We will now explain the method of leaping, one of the most exciting of all these exercises.

Set the string to quite a low elevation, — say two feet from the ground, — stand with your back to it, the cross-bar in your hands, and run quickly round. When you come about one-quarter of the distance, try to fling yourself into the air, not by jumping with the legs, but by letting the whole weight depend on the rope, so that the centrifugal force takes you off your feet. As you touch the ground, take about three long steps, and at the third step hurl yourself again off the ground, with the body straight, and the feet extended well behind, and the impetus will carry you over the string, and land you neatly on the other side. You will soon learn to increase the hight of the jump, until you can pass over the string at an elevation of ten feet with perfect certainty.

Another very pretty, though not so dashing, a feat is to spin round on your own axis as you run round the course. At first it is needful to manage this cautiously, as a slip of the foot is sure to disturb your balance, and send you ignominiously scraping your way over the gravel in a derogatory and rather painful position. When, however, you have mastered this art, you can go round revolving the whole time, keeping your legs straight, feet together, and toes pointed.

There are many modifications of these exercises which I should like to describe; but as our space is limited, we must content ourselves with two more. At the same time I may say, that if any of the readers of this book succeed in achieving them, they will bid fair to attain no mean position in the gymnastic art.

In the first of these exercises the performer never moves hand or foot, but holds himself straight, stiff, and immovable as an Egyptian statue, and in the course of his progress round the central post his feet describe a series of circles, or rather spirals, while his hands merely move in a circle, and serve as the axis on which the body revolves. This feat is not very easily made intelligible, but with the help of two diagrams we hope that our readers will comprehend it. Fig. 2 shows the method of commencing it. The performer grasps the cross-bar in both hands at the full stretch of his arms,

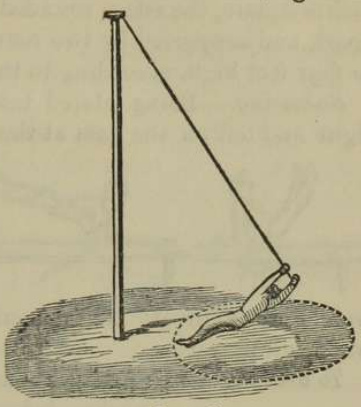


Fig. 2.

holds himself quite straight and stiff, points his toes, and then falls forward, as shown in the engraving. If he has the strength and nerve to hold himself quite still, though his face comes rather near the groung, the whole body swings off the ground, the hands being the pivot, and the feet take the course denoted by the dotted line, the hands retaining their position. It is possible, by dint of practice, to manage so as to make the entire circuit of the pole in four such revolutions, and the course of the performer is shown by the accompanying diagram (Fig. 3), where the dark circle in the centre represents the pole, the dotted line is the course taken by the hands, and the continuous line the course of the feet.

This is a most elegant and graceful performance, and never fails to elicit the admiration and applause of the bystanders. There seem to be no means of propulsion, and the performer appears, to an uninitiated spectator, to be impelled by a simple act of volition.

The last is the most daring and difficult of all the feats, being nothing less than passing over the string with the head downward and the feet in the air. This need not be attempted by any but a tolerable gymnast, and is achieved by running at the string in the manner already described, and just as the body is rising in the swing drawing the hands smartly to the breast, throwing the feet into the air, and clasping the rope between them. It is a most dashing feat, and generally takes spectators entirely by surprise.

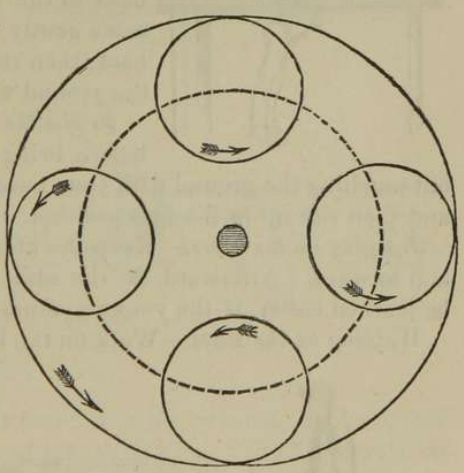


Fig. 3.

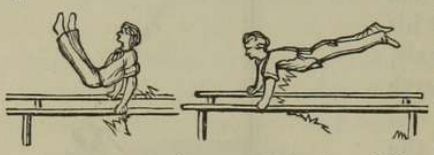
We should well have liked a longer disquisition on a favorite subject, but must take our leave, merely assuring the reader that the few exercises which we have described are the keys to the thorough mastery of the Giant Stride.

As a last caution, let us recommend that the ropes should be taken down every evening and put in a dry spot, as they are liable to be much weakened if permitted to hang in the open air. In wet weather the same precaution should be taken.

PARALLEL BARS.

These are two pieces of wood, from six to eight feet in length, and about four inches square, the edges rounded. For lads, they are fixed at about eighteen inches apart, and supported by two round standards, firmly fixed in the ground, from three to four feet high, according to the stature of the boys.

Balancing.— Being placed between the bars and in the centre, put your hands right and left on the bars at the same time. After a little jump upward, preserve your equilibrium on both wrists, the legs close; this is called the first position. Then communicate to your body a gentle movement of balancing from behind, forward, and continue this for several times, the body moving as it were upon a pivot. This should be practiced until the body swings freely backward and forward.



To bring both legs over.— From the first position, after a little movement of balancing, bring both legs, close and at once, over one of the bars forward, without touching it or moving your hands from the place. The same ought to be made backward, from right to left.

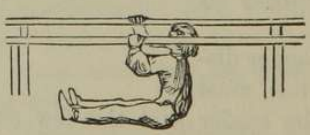
To jump out. — After having communicated to the body a movement of balance, the moment at which the legs are raised over the bars, jump backward over the right without touching it with the feet or waist; then perform the same jump forward. By the vaulting jump you may easily come between the bars, and also bring your body over both without touching them otherwise than with your hands.

To rise and sink down. — Being in equilibrium in the middle of the bars, place the legs backward, the heels close to the upper part of the thigh. From this position, come gently down, till the elbows nearly meet behind the back, then rise up gently without any impulse or touching the ground with your feet.

To kiss the bar behind the hands.— In the same position as before, bring the body gently down between the bars without touching the ground with your knees; kiss the bar behind each hand alternately, and then rise up in the first position.

Jumping on the Bars.— Keep the knees straight and jump along the bars backward and forward. Afterward, do the same with the fingers turned inside. These will be learned easier, if the young gymnast tries them first with bent knees.

Walking on the Bars.—Walk on the hands to the end and back again. In walking backward, take care to keep the elbows straight, or you will come down. When this is done with ease, do the same, only keep your fingers inside the bars.

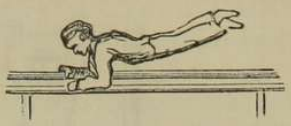


L

L.— Sit on the ground between the bars; take hold of the bars with your hands and raise your body still in the sitting position, and stay there as long as you can. When that is learned, jump along the bars in the same attitude. Keep your knees straight, and don't mind if your limbs ache a little.

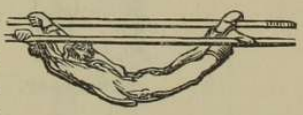
The Arm Swing.—Rest the fore arms on the bars, and swing. When tired of swinging, let the body hang straight, and then rise on the hands. Not easy at first, but soon done with practice.

The Roll.— Rest on the fore arms, swing backward, and turn completely over, catching the bars under the arms. It looks difficult, but is easy enough, only wanting a little nerve.



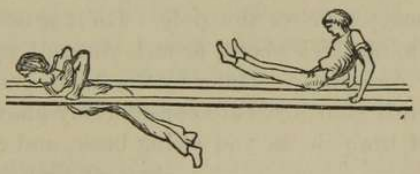
The Janus.— Sit astride the bars, having your hands rather behind. Now raise the feet, swing through the bars, and come up astride on the other side. Your arms will then be twisted, and your face will be looking in the opposite direction. Swing boldly, or the shins will be knocked against the bars.

The Sausage.— Kneel on the bars. Stretch the hands as far forward as possible, and hitch the toes over the bars behind, at the same time stretching them backward as far as possible. Now let the body sink between the bars, being supported by the hands and insteps. Now rise again. Difficult, but soon learned.



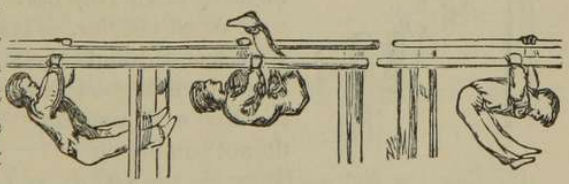
To stand on a Bar.—Sit astride one of the bars. Place the heel of the right foot on the bar, hitching the left instep under it. Draw yourself up by means of the left instep. Take care of your balance. This is a very useful accomplishment, and may possibly stand the gymnast in good stead.

The Drop.—Stand on the bars with each foot over one of the posts. Spring slightly into the air, put the feet together, and come down stiff, catching yourself by your hands. This should be done over the posts, as the bars might be broken, were the weight of the faller to come in the middle.



The Spring.—Swing at one end, and with a sudden impulse leap to the other on your hands. Take care of the balance of the body, or you will come on your back between the bars.

The Barber's Curl.—Hang on one end of the bars as in the L. Keep the knees straight, and turn over slowly, not letting the feet come to the ground. Stay there while you count ten, and come back the same way.



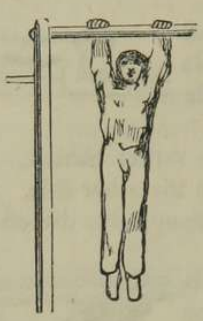
THE HORIZONTAL BAR.

Let two strong upright posts be firmly fastened into the ground, about six feet apart, and let a wooden bar be strongly mortised into their tops. The bar should be made of white deal, about two inches and a half in diameter. The bar must have no knot in it, or it will break. It should be so high from the ground that a spring is required to reach it with the hands. The surface of the bar should be free from all roughness, but not polished.

The Grasp.—The fingers should be hooked over the pole, keeping the thumb on the same side as the fingers. Hang as long as possible, first with both hands, then with each hand by turns.—See page 1100.

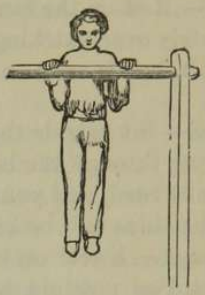
The Walk.—Hang by the hands, and walk by them from one end of the pole to

the other, backward and forward. Do not slip. Do it first with both hands on the same side of the pole, afterward with a hand at each side.—See below.



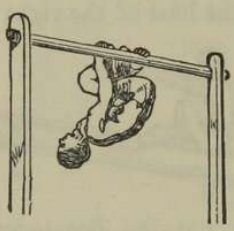
THE GRASP.

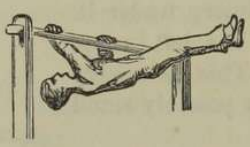
THE WALK.

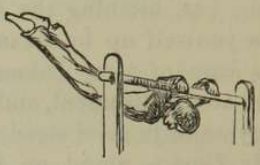


BREASTING THE BAR.

Breasting the Bar. — Hang by the hands, and draw up the body slowly until the chest touches the bar. Practice this as often as possible — knees straight.







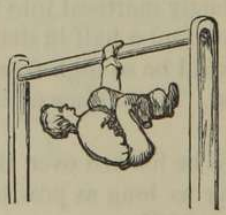
Kicking the Bar. — Hang by the hands, and draw up the feet very slowly until the instep touches the pole. Do it several times. Difficult at first, but soon learned. Do not kick about, or jerk yourself upward, or you may strain yourself.

Swinging. — Hang by the hand, and swing backward and forward. Practice this until your heels are considerably above your head each way. After a while, let go of the pole as you swing back, and catch it again as you come down. An inch or two at first is enough, but do not be satisfied until the hands can have a space of eight or ten inches between themselves and the bar.

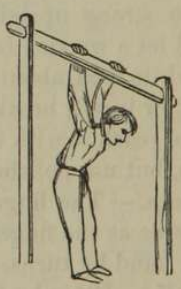
To sit on the Bar. — Hang by the hands, and pass one of your feet through them, hitching your knee over the bar. Then give a good swing backward, and come up sitting on the bar with one leg. Now draw the other leg over, and do not tumble off.

Circling the Bar. — Hang by the hands, and curl the body gently over the bar. If it is too difficult, stop for a minute or two, try something else, and after an interval try it again. It will be soon learned.

CIRCLING THE BAR.



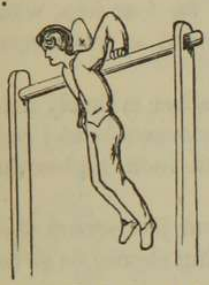
TRUE LOVER'S KNOT.



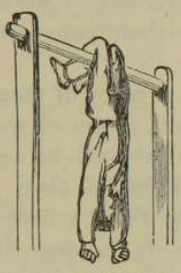
PASSING THROUGH THE ARMS.

The true Lover's Knot. — Grasp the bar; pass the left knee through the right arm, so as to let the knee rest in the elbow; pass the right knee over the instep of the left foot; let go with the left hand, and with it grasp the right foot. You will now be suspended by the right hand, and will be packed up in a remarkably small space. Take care of the right wrist, or you will spin round and twist off.

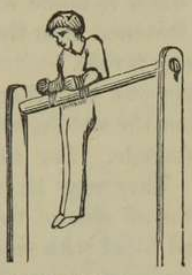
Passing through the Arms. — Hang by the hands, and bring the feet between them, permitting them to pass through until they can nearly touch the ground; now return in the same way. This cannot be done properly without practicing, as the muscles of the shoulder-blades must be capable of great relaxation, together with great power.



THE GRASSHOPPER.



HANGING BY THE LEGS.



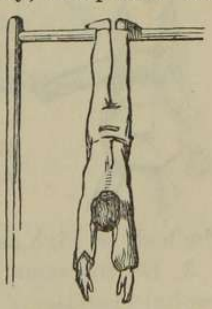
THE ARM-CHAIR.

The Grasshopper. — Sit on the pole, grasping it with the fingers to the front. Slide gradually off, until the small of the back rests against the pole, while the arms are elevated at the elbows like a grasshopper's legs. Now draw yourself up again.

Hanging by the Legs. — This is easy enough, and a capital preservative against determination of the blood to the brain. First practice it with both legs over the pole; then take off the left leg and hitch it over the right instep; then learn to hang by one leg only, while you try to carry a weight in your hands. When you are perfect and confident, sit on the pole, and drop off backward, catching yourself by the legs. This must be done with a fall like a plummet, or the body will swing, and probably unhitch the legs from the pole.

The Arm-chair. — Hang on the bar by the arms just below the elbows, keeping the elbows firmly pressed to the side. The hands should be lower than the bar, to counteract the swing of the body.

Hanging by the Feet. — Hang by the hands, and curl up the body, until the insteps are well hitched over the bar. Let go the hands cautiously, and permit the body to hang at full length. The best way to reach the bar again is to seize one of your legs, and pull yourself up by it.



HANGING BY THE FEET.

To leave the Bar. — Never get on the bar or leave it in a clumsy manner; there should be art about everything. To leave the bar effectively is well worth practicing. Here are six modes: —

1. Sit on the bar; drop and hang by the legs, at the same time giving the body a swing forward, which will loosen the hold of the legs. Alight on the hands, and get gently on the feet. This is rather a brilliant finish, and not so difficult as it appears.

2. Sit on the bar, place both hands on one side, and vault over.

3. Sit astride, place both hands on the bar in front, bring up both feet, at the same time springing upright; run along the bar and jump off the end, or slide down the post if it is too high to jump.

4. Hang by the hands, draw up the body until the chest touches the bar; spring off backward by the force of the arms.

5. Hang by the hands, and swing completely round once, letting the impetus hurl you forward. Take care to cross the feet and come down on the toes.

6. If you are tired, and cannot perform any of these things, merely hang by the hands, and come round through them, but never merely loose the pole.

THE HORSE.

There is not a more graceful or more interesting series of exercises than those performed on the Wooden Horse. They are very useful, also, as they give exceeding pliancy to the limbs, and teach the gymnast how to take advantage of the weight of each member. They have also the advantage of requiring some daring, and a spirited lad will always surpass at these exercises.

The horse is made of a great cylinder of wood mounted on four legs, which are firmly fastened into the ground — their ends should be charred as was directed for the Giant Stride.

Nearer one end than the other a piece of stout rough leather is firmly nailed, to represent the saddle, and two curved pieces of wood bound the saddle and represent the pommels. The hind pommel should be nearly half an inch higher than the other. They may be covered with leather also.

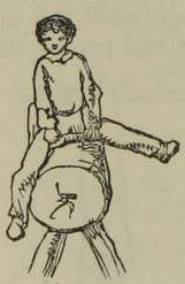
On the off side of the horse a pit about a foot deep and four feet square should be dug, and filled with sawdust, while on the near side the paving should be either very fine gravel, or, if possible, sand.

There should be several horses, adapted to the different sizes of boys who are to practice on them. When a boy can place his chin on a level with the saddle, he should change to a higher horse, as the top of the saddle ought to be on a level with the nose of the gymnast.

Mounting. — Stand by the horse, place one hand on each pommel, spring up, so that the body is supported by the hands, while the legs rest lightly against the horse. Keep the body upright and knees straight. Down and up again several times. Always come down on the toes.

Now do the same thing; but, in springing up, throw out the right leg until it is nearly at right angles with the body, then the left. Afterward spread both legs as widely as possible.

When this can be done with ease, spring up as before, rest a moment, then throw the right leg easily over the saddle, removing the right hand and there you are.



Dismounting. — Put the left hand on the fore pommel, right hand on the saddle, spring off and come to the ground, keeping your right hand still on the saddle. Be sure in all these exercises to come down on the toes.

Sustaining the body. — 1. Spring up as in mounting, and throw the body away from the horse, bringing it back again without coming to the ground.

2. Mount, and putting both hands on the front pommel, raise the body as high as you can. Don't be afraid of going too high.

3. Do the same, but swing the body backward and forward. Hard work, but capital exercise.

4. Do the same, and slap the soles of your shoes together.

Knee practice. — 1. Put your hands on the pommels, spring up, and lodge your right knee on the saddle. Down, and then the left knee. Then both knees. Practice these well.

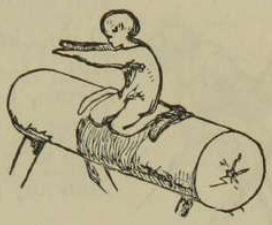
2. Hands on pommels, leap up and touch the saddle with both toes.

3. Kneel on the saddle with both knees; now lean well forward and jump off. Very easy, but requires confidence.

Swinging practice. — 1. Sit behind the saddle, put the left hand on the front pommel, and the right hand on the other. Raise the body and swing round the horse,

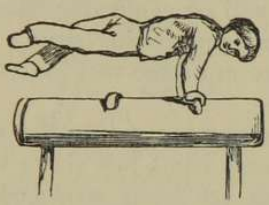
KNEE PRACTICE.

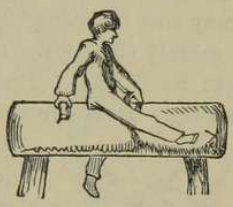
TOUCH SADDLE.



JUMPING OFF.

seating yourself on his neck, *before* the saddle. Change hands, and swing round until you regain your former position.

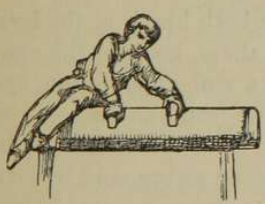


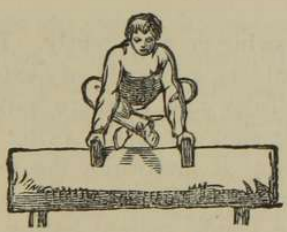


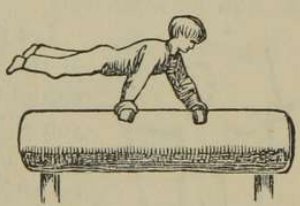
2. Put both hands on the front pommel, raise the body, and suddenly swing boldly upward, turning round and crossing the legs, so that you will sit on the saddle with your face to the tail. Keep the hands in their places, and swing back again in the same manner.

Miscellaneous Exercises. — Hands on the pommels, spring up and put the right leg through the arms, letting the left hang straight. Withdraw the right leg, and spring up again, using the left leg, and letting the right hang down.

Hands on pommels, spring up, and seat yourself like a lady behind the saddle; spring down to the ground, and seat yourself in a similar manner before the saddle.

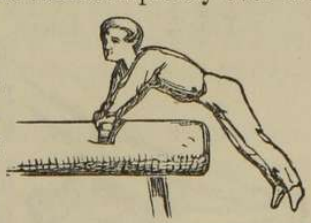






Hands on pommels, spring up, cross your feet, pass them through the hands, and come to the ground on the opposite side.

Take a short run, place the hands on the pommels, and vault completely over the horse, keeping the knees straight.



Sit behind the saddle, put both hands on the hind pommel, and throw yourself off over the horse's tail. Hands on pommels, spring up, make the body into an L, let the feet pass through the hands and rest suspended without touching the saddle. Knees quite straight.

A good one for a finish. — Take a run, put both hands on the very top of the pommels, and throw yourself over in a regular somerset. That is not bad, but you can do better after the somerset has been well learned.

Throw the somerset as before, only do not let go the hands. You will now be standing with your back to the horse, the spine considerably bent, and your arms thrown over your head. Wait so for a few seconds, and then with a powerful effort throw yourself back again, so as to come on the ground on the side of the horse from which you started. This is really difficult, as it requires practice, strength, and confidence, but it looks so well that it is worth learning. The writer of these few instructions has often astonished the natives with it, and has lately repeated it after two years' absence from any gymnasium.

THE SWING.

Let no one despise this exercise. It is worth learning, if only as a preservation against sea sickness. If any one can stand a twenty-feet swing for half-an-hour, the sea may toss its worst, for he will come off unscathed. Now, I do not mean to say that merely sitting on a board and getting swung by some one else is any great object: far from it. But there are some very graceful exercises to be managed on the swing. Here are some: —

FIG. 1.

1. The way to get into the swing is as follows — Take one rope in each hand, just above the seat; walk backwards until the ropes are freely stretched. Now run sharply forward, letting the hands glide up the ropes as far as possible, and the instant that you feel a check, grasp the rope tightly, and spring into the seat standing. When there, work easily up by alternately bending and straightening the knees. (See 1.)

2. When in good swing, slip the feet off the seat (which should not be more than four inches wide); let the hands slide down the ropes, and come down sitting. To recover the standing position, reach upward with the hands as high as possible, and draw yourself upward as the swing is going forward, when the seat will place itself exactly under your feet.

3. Now for some feats.

FIG. 2.

Let the swing go very gently. Place both hands at the level of the shoulders, and suddenly extend them, keeping the arms straight. Take care, as there will be a violent vibration, and you will be shot out of the swing before you know where you are. Practice it first while the swing is still, but do not be satisfied until you can do it while in strong swing, and without closing the hands, merely letting the palms rest against the ropes. (See 2.)

Swing still. Stand up on the seat, and grasp the rope with the hands as low as possible, without bending the body or the knees. Now lean forward, making your hands the pivot, and do not be astonished at finding your heels in the air, and your head downward. To recover yourself, the body must be bent a little. (See 3.)

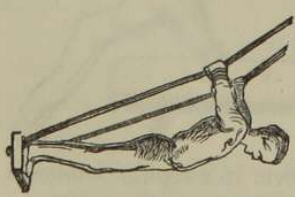


FIG. 3.

Stand sideways on the seat, grasp one rope with both hands leaning your back against the other, taking care to have the rope well between the shoulder blades. Put the inner centre of the left foot against the opposite rope, and fix the right foot in the same manner against the left

heel. Now let go both hands, and lean well backward, when you will be exactly balanced. When you are secure with a quiet swing, practice it while the swing is moving until you can lie securely against the rope while you are moving freely. The balance is entirely kept by the shoulder blades against the rope, and the arms must be folded in order to throw the shoulder blades well back. If the gymnast gets alarmed and puts his hands out to save himself, the rope slips off his back and out he goes. (See 4.)

While the swing is working, suddenly hang out the right arm and foot, supporting yourself by one hand on the rope, and one foot on the seat. Practice this on both sides. (See 5.)

Fig. 4.

Fig. 5.

Fig. 6.

Seize the left rope with both hands, press the feet firmly against the ropes where they join the seat, and fall out forward. The ropes will now cross, and when the swing is in full operation, the curves described are most elegant. To recover the ordinary position, wait until the swing is going backward, and a powerful twist of the body will uncross the ropes, when the right hand should take hold of the right rope and steady the swing. (See 6.)

When the swing is in motion, grasp the ropes as tight as possible, and raise the feet until they are high in air between the ropes. Take care of the balance in the back swing, as, if the body is suffered to bend backward, the hands will hardly bear the strain. Now slide slowly and carefully down the ropes until the head rests on the foot-board.

To make a telling exit from the swing, two ways may be adopted. First way: Get the swing into a firm, steady movement, sit down, and bring both hands inside the ropes; and just as the swing has passed its centre, strike the seat away with the hands and you will shoot forward several yards. Take care to come down on the toes, and to lean well backward as you leave the swing, as the impetus will bring you upright as you touch the ground. (See 7.)

Fig. 7.

The second method is, to seat yourself in the same manner, and, as the swing crosses its centre backward, lean well forward and strike away the seat. You will then be hurled backward, and if your balance is good, will come to the ground in a very elegant attitude. Be sure to lean well forward, cross the feet, clasp the hands, and come down on the toes.

Great care must be taken to lean well backward if you shoot out forward, and well forward as you shoot backward, or in the one case you will come with your nose on the ground, and in the other you will find the back of your head rather damaged. To practice with gentle swings at first, and then increase. I have often done it with the swing at full speed, and in one instance in a public gymnasium, I shot so far forward that the spot was marked by a row of iron nails driven into the floor.

In a volume of this nature, it is impossible to give more than a comparatively slight sketch of any subject. I am sure, however, that if the reader will master even these short instructions in gymnastic exercises, he will be able to realize that great blessing, the sound body, in which only a sound mind can reside. His trained eye will be accustomed to measure instinctively any obstacle in his way, and the training of his body will enable him to put forth the full power of his muscles to overcome the obstacle. Danger will lose half its perils to him who thus knows how to meet it. A strong rope will be as safe as a staircase to him; it will be perfectly indifferent to him whether his head or his heels be uppermost, and he will be enabled, by the presence of mind which such studies engender to think out calmly modes of escape from danger which would instantly overwhelm those whose bodies are uninstructed.

But even to pass by the question of utility, it is a duty of man to preserve his body in health, and to develop its powers. Every man would think himself wrong to neglect the mind; surely then, every man ought no less to think it wrong to neglect the body,which is made by the same mighty Hand that implanted the mind within it. Indeed, the neglected body is sure to injure the mind, and therefore those who improve their bodies are at the same time improving their minds.

I know one young man who owes all his health, and probably his life, to gymnastic exercises. From his earliest childhood he was always ailing, and through the whole of his childhood was never suffered to sleep unwatched. When he entered upon manhood, the childish illness changed into annual fevers, which held their sway until he had been for some time at one of the Universities.

His medical attendant advised him to take regular exercise, and recommended the study of gymnastics. He rapidly improved in health and strength, his fever has not attacked him for eight or nine years, and he actually led the gymnasium for a whole year.

Were I to have the charge of a school, I should consider the gymnasium as part of the regular school discipline, and take care that the boys were exercised as carefully in their bodily as their mental powers.

RIDING.

THE HORSE.

THE horse is one of the most beautiful and graceful animals in nature, and perhaps the most useful to man, though in this respect it would be difficult to say which of the four or five domesticated quadrupeds bears the palm. During life, the horse and the dog would each contest the point; while with relative value after death, the bullock, sheep, and swine, are fairly entitled to an equal share with them. But there is something very captivating in the appearance of the horse, whether used for the purposes of war, or for racing, or for hunting, or road-work; and in all these several capacities the readers of this book may possibly admire him, though it is chiefly as the riding-horse, or hack, that he usually attracts their notice.

In the animal kingdom, the horse belongs to the division VERTEBRATA, and class MAMMALIA, having a back-bone composed of vertebræ, and his young being suckled. His broad and undivided hoof places him among the *ungulata;* and lastly, his teeth are as follows, viz. six front teeth, above and below, called "nippers;" two canine in each jaw, called "tusks;" and the remainder, consisting of grinders, having flat

surfaces opposed to each other, with rough ridges on them, by which the grass, hay, and grain are rubbed or ground down to a fine pulp, adapted to the stomach. These teeth are moved or rolled on each other by a peculiar action of the muscles of the jaw, so as to aid the process.

THE MARKS OF AGE IN THE HORSE.

By means of the gradual wearing down of the front teeth, or nippers, the age of the horse may be known. Each of the nippers has a hollow in its upper surface, which is very deep and black when the tooth first rises above the gum, and is gradually effaced by the friction caused by the cropping of the grass, or by biting at the manger, or other kinds of rubbing; but as these vary a good deal according to circumstances, so the precise degree of wearing away will also be liable to fluctuations; and the rules laid down only approximate to the truth, without positive accuracy as to a few months. There are also two sets of teeth; a milk set, which first rise, beginning at once after birth, and a permanent set, which replace the milk-teeth as they fall out. The milk-teeth come up two at a time, but all are up by the end of the first year. The permanent teeth, also, make their appearance by twos, the first pair showing themselves in the place of the two middle milk-teeth in the third year, and being generally level with the other milk-teeth by the end of the fourth year, by which time the next pair have fallen out, and the permanent teeth have shown themselves in their places. At five years of age the horse has lost all his nippers, and his corner permanent teeth have nearly completed their growth. The tusks are also above the gums. The centre nippers are now much worn, and the next are becoming slightly so. At six years old the "mark" in the centre nippers is quite gone; at seven years of age this disappears from the next pair, and at eight from the corner nippers; after which, none but a professed judge is likely to make out the age of the horse by an inspection of his mouth; and, indeed, at all times the tyro is liable to be deceived by the frauds of the low horse-dealer, who cuts off the top of the teeth, and then scoops out a hollow with a gouge; after which a hot iron gives the black surface which in the natural state is presented to the eye. This trick is called "bishoping."

THE PACES OF THE HORSE.

The natural paces of the horse are the walk, trot, and the gallop; to them are added by man the canter, and sometimes the amble and the run. In the walk, each leg is taken up and put down separately, one after the other, the print of the hind foot in good walkers generally extending a few inches beyond that of the fore foot. The order in which the feet touch the ground is as follows: 1st, the off fore foot; 2d, the near hind foot; 3d, the near fore foot; and 4th, the off hind foot.

The gallop consists of a succession of leaps, during a great part of which all the feet are off the ground. As the feet come to the ground they strike it in regular succession; but the exact order will depend upon the lead, which may be either with the off or near fore leg. When in action and the horse is leading with the off fore foot (which if well broken he would do), the off hind and near fore feet touch the ground simultaneously next the near hind foot, and lastly, the off fore foot which he leads with. In the trot, the two legs of opposite sides are moved exactly together, and touch the ground at the same moment; whilst in the amble the two legs of *each side* move together, and the horse is supported for the instant upon the half of his usual and regular foundation. To counteract this deficiency in the centre of gravity, the body is balanced from side to side in a waddling manner.

TERMS USED BY HORSEMEN.

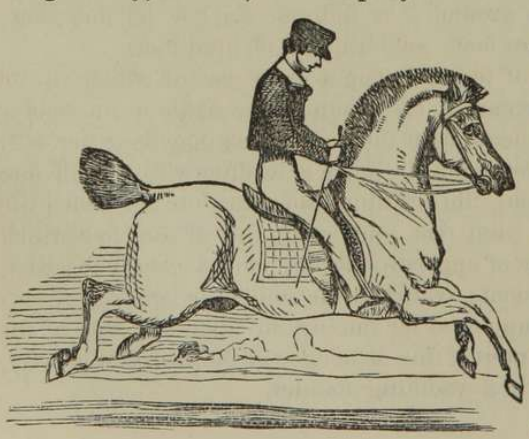
The left side is called the "near side," the right the "off." Four inches make "a hand." The upper part of the horse's neck is called his "crest;" the bony ridge in front of the saddle the "withers;" the part between the saddle and the tail the "croup;" the bony points, one on each side the bosom, the "shoulder points;" and the line between these and the back of the withers, corresponding with the shoulder blade, is the "line of the shoulder." The body between the hip and shoulder line is called the "middle piece." In the fore legs, the two divisions are called the "arm" and "cannon;" above which is the "elbow-joint," and between them the "knee-joint." In the hind leg, the two parts are called the "thigh" and "cannon;" and the joints are the "stifle" and "hock." Below these, in both the hind and fore legs, are the upper and lower "pasterns," then the "coronet," or ring between the leg and foot, and lastly, "the hoof."

FORM OF THE HORSE.

It is a common observation of the horseman that the horse can go in all forms; and this is borne out by the fact, that he does occasionally do so; but nevertheless, it is well known, that among a large number it will be found that those whose form is most in accordance with the shape considered the best by good judges, will turn out the best movers. In technical language, the horse whose "points" are the best will be the best horse. These points are considered to be: a neat head well set on a lean wiry neck, the latter with a very gentle curve, whose convexity looks upward (the opposite form to this makes the "ewe neck"); moderately high withers; a sloping shoulder, wide in the blade, which should be well furnished with muscles; strong muscular loins; a croup not too straight nor too drooping, with the tail set on with an elegant sweep; ribs well rounded, and carried back near to the hips, so as to make the horse what is called "well ribbed;" circumference or girth of good dimensions, indicating plenty of "bellows' room;" thighs and arms muscular; hocks and knees bony and large, without being diseased; cannon bones large and flat, with the suspensory ligament and tendon large, strong, and clearly defined; fetlock joints strong, but not round and inflamed. The eye should be full, clear, and free from specks; and the ears should be moderately small and erect; the feet should be round, and not contracted at the heels, with a well-formed frog.

VARIETIES OF THE HORSE.

Besides the several kinds of horses suitable for grown people, those for boys are the galloway, the cob, and the pony. The first of these may be considered either a small horse or a large pony, and is usually about fourteen hands high; and though strong and capable of carrying weight, yet of a moderately light and active make. He is so called from the district where he was originally bred in large numbers. The cob is a thick and very strong pony, or galloway, frequently made to look still more so by cutting his tail and mane short, called "hogging" them, thus—



Correctly speaking, a pony is understood to be under thirteen hands in

hight, a galloway between thirteen and fourteen and a half, anything over that a horse.

Many ponies are now bred almost of pure Arabian blood, and they are well suited for lads who have mastered the early difficulties connected with keeping the seat under all ordinary circumstances; but as they are generally very high-spirited, they are scarcely suited for the beginner, and he had better content himself with an animal of more plebeian pedigree and sluggish temperament.

THE ACCOUTREMENTS AND AIDS

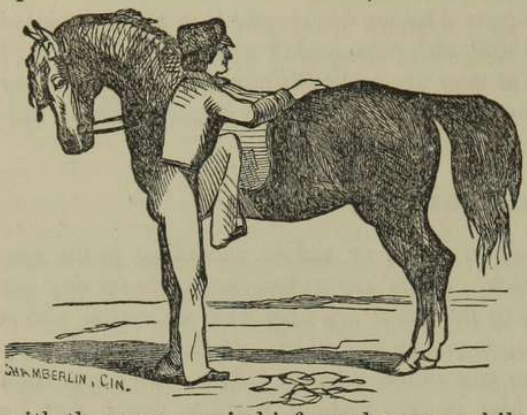
Required by the young amateur, are either a pad or saddle, according to his age, together with a bridle and a whip or stick. Spurs are seldom desirable for any but the accomplished rider, as they are apt to irritate if not used with discretion, and it is rather difficult to put an old head upon young shoulders. If the learner is very young, a pad which is made without any tree affords a better hold for the knees than a regular saddle, and will also enable him to ride without stirrups, which feat he will hardly manage on an ordinary smooth saddle. The stirrups for boys ought always to be used with strong stirrup leathers, and these should be attached to the saddle by spring-bars, which release the stirrups in case of the leg being entangled in them after a fall.

The bridle is either a single or a double-reined one, according to the mouth of the pony ridden. A single-reined bridle is usually a snaffle, it being very improper to allow any one to ride with a curb alone, unless he has very steady and light hands. The snaffle bit is merely a jointed bar of iron, but when used alone it has a light cross-bar as well as a ring, in order to prevent the bit being pulled through the mouth. This, however, in the double-reined bridle is omitted, since it would interfere with the action of the curb. Snaffles are either smooth or twisted, and are made of all sizes, the smallest being only adapted for occasional use, and not for the hands of the learner, who should have a large smooth one. The curb-bit consists of three parts; the mouthpiece, which usually has a bend in it called the port, for the purpose of pressing against the roof of the mouth; secondly, of the cheek-piece, which has a ring at the lower end for the attachment of the rein, and another at the upper end of the head-piece of the bridle; and thirdly, the curb-chain. This chain is pressed against the outside of the lower jaw, by the upper arm of the curb used as a lever, and it should be hooked up sufficiently tight to act upon it by pulling the rein, whilst at the same time it should be loose enough to prevent its fretting the jaw. This delicacy of adjustment requires some little practice, and the young rider should always ask his teacher to show him the proper mode of applying the curb-chain. Sometimes a martingale is needed, in order to keep the head down, but generally the young rider is better without it, if he will keep his hands well down, and avoid all jerking of the mouth.

MOUNTING.

The rider, even at the earliest age, should first examine the girths and the bridle, and see if they are properly adjusted; for though when leaving home he may be able to depend upon steady and experienced hands, yet, after putting up at strange stables, he is liable to be led into an accident by careless servants, and therefore it is better to get into the habit of always inspecting these essentials to safety and comfort. If there is an attendant, he should hold the rein with his right hand, standing by the off shoulder of the horse, so as with his left hand to hold the stirrup iron for the rider's right foot as he throws it over the horse's back. The next thing to be done is for the rider to stand at the shoulder of the horse with his left side

toward that part. He then lays hold of the reins with his left hand, drawing them up so short as to feel the mouth, and at the same time twisting a lock of the mane in his fingers so as to steady the hand Next, the left foot is placed in the stirrup when the accompanying attitude is presented, exactly as here shown. At this moment a spring is given from the right foot, the right hand reaches the cantle of the saddle, and the body is raised till the right leg is brought up to the level of the left, when the slightest imaginable pause is made, and then the right leg is thrown over the back of the pony, keeping the toe down and heel elevated, or with the spur on mischief may happen, while the right hand leaves its hold, and the body falls into its position in the centre of the saddle; after which, the right foot has only to be placed in the stirrup to complete the act of mounting.

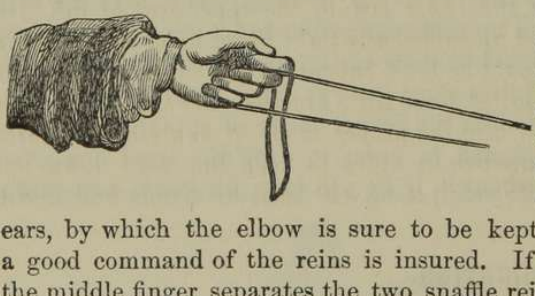


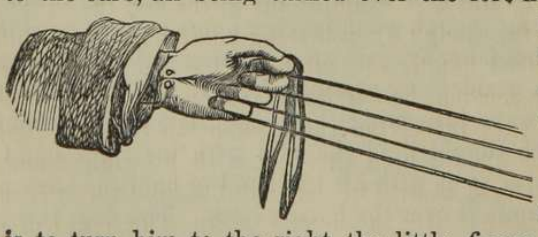
DISMOUNTING

Is exactly the reverse of the last process, and requires, first, the reins to be shortened and held in the left hand with a lock of the mane; secondly, the right leg is taken out of the stirrup, and is thrown over the back of the horse until it is brought down to the level of the other leg. After this, if the horse is small, suitable to the rider, the body is gently lowered to the ground, and the left leg is liberated from the stirrup; but if the horse is too high for this, the foot is taken out of the stirrup by raising the body by means of the hands on the pommel and cantle of the saddle, and then the body is lowered to the ground by their assistance.

THE MANAGEMENT OF THE REINS

Is of great importance to the comfort of the rider, and also to his appearance, for unless they are held properly, the body is sure to be awkwardly balanced. When the single rein is used, the best position is to place the middle, ring, and little fingers between the two reins, and then to turn both over the fore-finger, where they are tightly held by the thumb. In all cases the thumb ought to point toward the horse's ears, by which the elbow is sure to be kept in its place close to the side, and a good command of the reins is insured. If a double-reined bridle is employed, the middle finger separates the two snaffle reins, and the little one those attached to the curb, all being turned over the fore-finger, and firmly held by the thumb.





In both cases the ends of the reins are turned over the left, or near, side of the animal's shoulder. When it is intended to turn the horse to the left, it is only necessary to raise the thumb toward the chest of the rider; and on the contrary, when the desire is to turn him to the right, the little finger is turned downward and backward

toward the fork. In many well-broken horses the mere moving of the whole hand to the right or left is sufficient, which, by pressing the reins against the neck, indicates the wish of the rider, and is promptly responded to by the horse. This action, however, is objected to by some good horsemen, though, in my opinion, most erroneously, as it is capable of being made highly effective in practice.

THE SEAT

Should always be square to the front, without either shoulder being in advance; the loins moderately arched inward without stiffness; the elbows close to the side, but held easily; the knees placed upon the padded part of the flat *in front* of the stirrup-leathers; toes turned *very* slightly outward, and the foot resting on the stirrup, the inside of which should be opposite the ball of the great toe, and the outside corresponding with the little toe. In hunting, however, it may be placed "home," that is, with the stirrup close to the instep. The heel should be well lowered as far as possible beneath the level of the toe, which gives a firm seat. But the great point is to obtain a good grasp of the saddle by the knees, which should be always ready to lay hold like a vice, without however constantly tiring the muscles by such an effort. The left hand is now to be held very slightly above the pommel of the saddle, and the right easily by the sight of it, with the whip held in a slanting position. In order to show the effect of an incorrect mode of holding the reins, the rider has only to place his hands with the knuckles in a horizontal position, and the elbow is sure to be turned out in a most awkward manner.

THE CONTROL OF THE HORSE

Is effected by the reins, heels, voice, and whip, variously used according to his disposition and temper. Some require only the most gentle usage, which in fact is almost always the most efficacious, especially by young people, for whom the horse and dog seem to have an especial affection, and to be always more ready to obey them than might be expected, when their want of strength to enforce their wishes is considered. The young rider will therefore generally find it to his own interest, as well as that of the noble animal he bestrides, to use his whip and heel as little as possible, and to effect his object solely by his voice and the gentlest pressure of the bit. In this way the most high-couraged horses are kept in order by young lads in the racing stables, and the amateur will do well to follow their example. It is astonishing how fond horses and dogs are of being talked to by their juvenile masters, and it is right to gratify their love of society by so doing on all occasions. The reins serve, as already explained, to turn to the right or left, or by drawing tight to stop the horse, and, on the contrary, by relaxing them to cause him to proceed, aided, if necessary, by the voice, heel, or whip. When it is desired that the right leg should lead in the canter or gallop, the left rein is pulled and the left leg pressed against the flank, by which means the body of the pony is made to present the right side obliquely forward, and by consequence the right leg leads off. On the other hand, if it is wished to lead with the left leg, or to change from the right, the right rein is pulled, the right leg pressed to the side, and then the left shoulder looks forward and the left leg leads off.

MANAGEMENT OF THE WALK.

When it is wished to make the horse walk, quiet him down by soothing him with the voice if excited by the gallop or trot; and then, by sitting very quietly in the saddle, and loosing the reins as much as will allow the head to nod in unison with the action of the body and legs, the walk is generally at once fallen into, and there is no farther difficulty except to prevent a stumble. A tight rein is not desirable in

this pace, since it prevents that liberty of action which is required, and leads to a short walk, or very often a jog-trot; and yet there should be such a gentle hold, or preparation for a hold rather, as will suffice to check the mouth in case of a mistake. This is a very difficult art to acquire, and is only learned by long practice; but as few horses fall at this pace, great liberty may generally be allowed to their mouths. Besides this, little is necessary, more than to sit steadily, *but not stiffly*, in the saddle, and not to sway about more than is sufficient to avoid the appearance of having swallowed a poker.

THE TROT AND CANTER

Are effected by rather different methods, but both require a very steady hand, and a quiet treatment. In order to cause a trot, the reins are taken rather short in the hand, and the mouth held somewhat firmly, taking great care not to jerk it. The animal is then slightly stimulated by the voice, the body, if necessary, rising from the saddle, to indicate what is wanted. This seldom fails to bring the horse into a trot. If very irritable, the horse may be compelled to a trot by laying hold of an ear and twisting it, to avoid which he drops his head, and trots as a natural consequence. The canter is also an acquired pace, and for its due performance a curb-bridle is required. In order to make the animal begin this pace, the left rein is pulled, and the rider's left leg pressed against the side, by which the horse's right leg is made to lead off, this being the most usual, and certainly the most comfortable "lead" for the rider. The hands must make a very gentle and steady pull on the curb-rein, and the body generally must be very quiet in the saddle, whilst, at the same time, a very gentle stimulus is given by the voice, which must be repeated at short intervals, or the canter will be changed to a trot, or walk, both of which are preferred to it by most horses. Riders should avoid cantering long upon one leg, as it leads to inflammation of the joints, and they should either change the lead or alter the pace to a trot or walk.

THE MANAGEMENT OF THE GALLOP

Requires little instruction, practice being the main agent in effecting a good seat during this pace. The seat is either close to the saddle, with the body inclining backward, or standing in the stirrups, in which position the knees and calves only touch the saddle, and the body is bent forward over the withers. It should be the endeavor of the rider, while he bends his shoulders forward, to throw his loins well back, so as to avoid straining the horse's fore-quarters, by bearing too much weight upon them. This is done by the hold of the knees on the saddle, and by keeping the feet back, also by rounding the loins backward, and thus throwing the centre of gravity as far as possible behind the stirrup leathers. The object of standing in the stirrups is to save the horse when at his full gallop, as in racing, or in hunting, when he is going over ploughed ground or up hill. In either of these cases, this attitude allows the horse to exert himself without feeling the weight of the rider impede his movements more than can be avoided.

LEAPING

Is only an extra exertion added to the ordinary spring of the gallop, the attitude being exactly the same. It is best learned by beginning with small ditches, which the rider is soon able to clear without difficulty. He may next try sheep-hurdles, or very low stiles; but the latter being strong and firmly fixed, are dangerous to the rider, unless the horse is very sure of clearing them. A leaping-bar, if procurable, should always be adopted in preference to either, as a fall over it is not attended with bad consequences. The groom should place it at the lowest notch, and the

horse then may clear it at a moderate gallop; after which, if the rider is able to sit pretty closely, he may be indulged with a higher notch, and gradually it may be raised until the limits of power are reached. In riding at a bar, the learner should lay hold of a snaffle-rein in each hand, taking care to keep them close together, by the right rein being held also in the left hand. The horse is then to be urged to a smart canter or hand gallop, and held straight to the bar in this way, so that he is obliged to leap; or if disliking the act, being urged by the whip down the shoulder, or the spur, or the groom's voice and whip behind. Young riders, however, should never be put upon a bad or reluctant leaper, but should be taught upon one which is fond of amusement. At the moment of rising into the air for the leap the reins are relaxed, but should not be left quite loose; while the horse is in the air the body becomes upright, and as he descends it leans well back, until, after a high leap, it almost touches the croup. During this period the reins should be suffered to remain nearly loose, the hand barely feeling the mouth; but as the horse reaches the ground a stronger hold is taken, in order to guard against a mistake, which might require the aid of the rider to prevent a fall. It is not that he can keep the animal up, but that he checks him, and makes him exert himself in a double degree. There are various kinds of leaping; as the flying leap, the standing leap, the leap in hand, &c. The flying leap is merely one taken at a fast pace, and when the rider can maintain a good seat in the gallop, it is the easiest of all to sit. The standing leap is effected from a state of quiescence, and is much more difficult to sit, because the horse rises and falls more suddenly and abruptly. Between the two is the slow or steady leap, which is only effected safely by the good hunter or well-broken horse; but when perfect it is almost as smooth as a rocking-horse. This is the mode in which the young rider should be taught to leap. Leaping in hand is necessary for most horses in the hunting field, which would otherwise never be able to compete with full-sized hunters in the way they do. The young hunter, when he meets with a gate or other strong fence, which he knows is too much for the powers of his horse, at once gets off and leads him over by the rein; and when well taught, these little creatures will often tilt themselves over high timber, &c. in a marvelously clever manner, so that I have known them in this way to obtain a good place in long and severe runs. If my readers are allowed to partake in this exciting sport during their holidays, they should teach their horses to leap in hand, or they will be sure to be thrown out.

TREATMENT OF VICES.

The chief vices of horses are—1st, Obstinate Stopping; 2d, Stumbling from Carelessness; 3d, Rearing; 4th, Kicking: 5th, Shying; and 6th, Running away.

Obstinate Stopping, which in its worst forms is called "jibbing," is a very troublesome vice, and even in the saddle is sometimes attended with danger, whilst in driving, it is so to a dreadful degree.

The rider should never attempt to force his horse forward with whip or spur, which only aggravate bad temper; but should patiently sit quiet in the saddle, and keep his temper, until the horse chooses to move forward again. In this way sometimes very vicious animals are cured when they find that their stable is not the sooner reached by their device; on the other hand, if the whip is used, the horse is very apt to lie down and roll his rider in the dirt, or even sometimes to bolt into a river, or pond, and leave him in danger of his life. My young friends will therefore remember my advice when mounted on an obstinate horse not to lose their temper, not to use their whips, and get bemired or half drowned in consequence.

Stumbling is more a defect of conformation than a vice; but nevertheless, it greatly depends upon a want of spirit to keep a steady action of the fore legs. It often happens that a horse trots along for a mile or two safely enough; but after going

that distance he becomes lazy and careless, and trips with one foot and then with the other, a sure prelude to a fall, perhaps be a very bad one, and sufficient to cut both knees to the bone, and cause serious damage to the rider. The only way to avoid such accidents is to keep the horse at a steady pace, fast enough to keep him alive, but not enough to tire him. Loose stones and broken ground should be avoided, and a careful hold should be kept upon the mouth, without being so tight as to gag it. When a stumble actually takes place, the body should be well thrown back and the mouth forcibly jerked, so as to make the animal exert himself to keep his legs. An unsafe animal of this kind is, however, wholly unfit for young riders, who should never be allowed to ride one.

Rearing is a very dangerous vice, and not very common. If the rider should, however, be placed upon a rearer, he should be careful to avoid hanging upon the bit when he rises in the air, but on the contrary should loose the reins entirely, and clasp the neck, if the horse should rise very high in the air.

It often happens that this vice is produced by too tight and severe a curb in a tender mouth, and that upon changing the bit, or letting out the curb chain, the tendency to rise is entirely gone. Whenever, therefore, the young rider finds his horse inclined to rear, let him look well to his bit, and at once drop the curb rein if he has one. If, however, he has only a snaffle, he may rest assured that it is a regular habit, and at once make up his mind either to battle with it or to change his horse.

Kicking is much more common than rearing, and very many animals practice it. It is perhaps partly owing to the teasing of their masters; but whatever the cause, there can be no doubt that it is too prevalent. Sometimes it exists as a regular attempt to unhorse the rider, which is a very troublesome habit, and one very difficult to break, because it so often succeeds that the animal is tempted to try again. When this vice is met with, the rider should do all in his power to keep the head up, by jerking the bit, and at the same time he should sit well back, with his feet forward and heels down, and trust to his knees in holding on. When kicking is only the result of high spirits and "freshness," the best remedy is a smart gallop, which soon stops these pranks, and makes the most riotous animal quiet.

Shying is also very common, and is often the result of cunning, which leads them to pretend a greater degree of shyness than they really possess. The best mode of treatment is to take as little notice as possible of the shying, but carefully to make the horse pass the object at which he is looking, without regarding how this is effected. The whip should seldom be used, and never *after* the object is passed.

Bolting, or Running Away, is often the result of want of exercise, but sometimes is a systematic vice. A powerful bit and a steady seat, with good hands, are the best means of grappling with this habit, which is sometimes a very dangerous one. If the horse really runs away, the rider should not pull dead at his mouth, but should relax his hold for a short time, and then take a sharp pull, which is often effectual. A good gallop until he is tired will often cure a runaway for the rest of his life. There are a variety of bits intended expressly to counteract this vice, such as the Hanoverian Pelham, the curb with a high port, &c.; but nothing is perfectly effectual where there is a determination to run away. A nose-band has lately been invented for the purpose, which answers better than anything hitherto brought out; it consists of a long nose-band which crosses behind the jaw and then hooks on to the bit in the same way as the ordinary curb-chain. When the rein is pulled hard, this nose-band is drawn tight round the jaw, by which the mouth is closed, and the port is pressed strongly against the roof of the mouth, causing a great degree of pain, sufficient to stop most horses. This powerful remedy, which has been named the Bucephalus nose-band, should not lightly be used; but in the case of a runaway horse it is the only really efficacious one.

ROWING.

"A boat, a boat, is the toy for me,
To rollic about in on river and sea;
To be a child of the breeze and the gale,
And like a wild bird on the deep to sail,
This is the life for me!" — *Procter.*

HISTORICAL MEMORANDA.

THE origin of ships must be traced to the ark of Noah; but this was not a sailing or a rowing vessel, but simply a large floating house or receptacle for Noah and his family, and the various types of animated nature. The first navigators were the Phœnicians, who sailed in various seas. They were succeeded by the ships of Carthage, Egypt, Venice, Genoa, Holland, and Portugal. The Saxons under Alfred, and the Danes under Canute, had formidable navies. Alfred, who ascended the throne of England in 872, commenced the first English fleet in person, and is said to have suggested a variety of improvements in the structure, as well as greatly to have increased the size of vessels, some of the largest of which carried sixty oars. After the death of Alfred, the naval power of England seems to have lain dormant; and this, no doubt, tempted the Norman invasion in 1066, under William the Bastard, who sailed for the coast of England with a fleet of 900 vessels; and so sensible was he of the importance of the naval service, that he gave certain privileges to certain towns on the sea-coast, which were from their certain number called the Cinque Ports. Richard I. fitted out large fleets; and his successor, John, asserted the exclusive right of the English nation to the dominion of the seas. The reign of Edward I. was also distinguished for successes at sea. Henry VII., on gaining the throne, in 1485, put the navy into a respectable condition; and a large ship, called the "Great Harry," which may probably be termed the first *ship* of the British navy, was built at a cost of 14,000*l.* The discovery of America, about the period of the accession of Henry VIII., gave a new stimulus to our navy, and many ships were then built of large tonnage, some of a thousand tons. But his daughter, Queen Elizabeth, deeply impressed with the maxim, that "whosoever commands the sea, commands the trade of the world," and that "whosoever commands the trade, commands the riches of the world," and consequently the world itself, so encouraged and restored the marine, that she may be called the "Restorer of the naval power of England;" and, in a few years after, the invasion of the Spanish Armada put our naval power to the proof. Charles I., the great and courageous Cromwell, and even the pleasure-loving Charles II., were all impressed with the great advantages of a formidable navy; and in the reign of Anne fifty-two French ships, containing more than 3,000 guns, were captured. And during the reign of George III., her naval superiority was placed by a series of glorious successes beyond dispute.

CONSTRUCTION OF ANCIENT SHIPS AND GALLEYS.

The Egyptian vessels are the earliest of which any well-authenticated graphic illustration has been preserved. The celebrated Egyptian vessel called the "Isis" is said to have been in length 180 feet, in breadth 45 feet, and in hight, from the upper edge of the deck to the bottom of the well, 43 feet. The well-known ship of Hiero, king of Syracuse, was nearly 400 tons burden.

ROMAN GALLEYS, SHIPS, ETC.

They were in length about 125 feet, and in breadth 10 feet. Their first requisite was swiftness, and no part of the side was left vacant where an oar could be put out;

hence they had often three banks of oars, one above the other. In most ancient ships, there was placed at the prow an image called "the sign." The part of the vessel that cut the water was called the "goose." At the stern, which generally resembled a shield, was set or some way delineated a representation of the deity to whose tutelary favor the ship was committed, and to which daily prayer and sacrifice were offered. War ships were chiefly rowed with oars, that they might be able to tack about. The first long ships were rowed with fifty oars, but afterward a larger number was used. In the more perfect condition of ancient navigation, there were some ships that had as many as five tiers of oars, and three hundred rowers. Two large holes at the prow of the vessel, occasionally used for oars, were called the ship's "eyes;" and a wooden projection at the prow, covered with brass, was called a "beak;" and pieces of wood placed on each side of the prow of a vessel, to ward off the force of the enemy's beak, were called the ship's "ears." Over these vessels were certain raised platforms, and on their forecastles were towers on which the soldiers stood, whose shields were usually hung upon the railings which begirt the ship. The sides of the prow were called "cheeks." The anchors at first used were often large stones, or even bags of sand; afterward, however, the ancient ships carried anchors with one, two and four flukes. The larger anchor was called the "sacred anchor," and reserved for the most trying occasions. Among the ancients, ships were usually termed "horses," which explains many ancient fables. The elder Pliny, for instance, tells us of a boy who was carried by water some miles every day on the back of a dolphin to school; the vessel, in all probability, having a dolphin at the prow. Arion, the famous musician of Lesbos, having made great wealth in foreign parts by his profession, was returning home by ship, when the sailors resolved to kill him, and seize upon his riches. Playing once again, at his last request, a favorite tune, he leaped into the sea. A dolphin, attracted by his melody, received him safely on its back, and carried him again to the coast where Periander lived. Arion, doubtless, escaped by a boat, the fore-part of which consisted of a dolphin.

Having thus given the young reader a notion of ancient boats and skiffs, we shall now proceed to make him acquainted with the modern practices of rowing, boating, sailing, &c.

OF BOATS.

A *Boat* is properly a vessel propelled by oars. In a more extensive sense the word is applied to other small vessels, which differ in construction and name, according to the services in which they are employed. Thus they are light or strong, sharp or flat-bottomed, open or decked, according as they are intended for swiftness or burden, deep or shallow water, &c.

The *Barge* is a long, light, narrow boat, employed in harbors, and unfit for sea. The *Long Boat* is the largest boat belonging to a ship, generally furnished with two sails, and is employed for cruising short distances, bringing the cargo and bales on board, &c.

The *Launch* is more flat-bottomed than the long boat, which it has generally superseded. The *Pinnace* resembles the barge, but is smaller. The *Cutters* of a ship are broader and deeper than the barge or pinnace, and are employed in carrying light articles, single passengers, &c. on board.

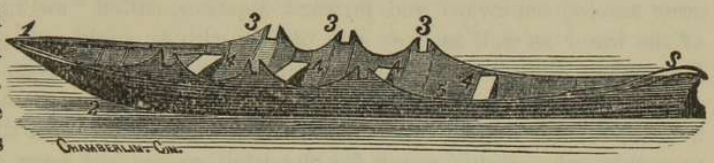
Yawls are used for similar purposes to the barge and pinnace. A *Gig* is a long, narrow boat, used for expedition, and rowed with six or eight oars. The *Jolly Boat* is smaller than a yawl, and is used for going on shore. A merchant ship seldom has more than two boats, — a long boat and a yawl.

A *Wherry* is a light, sharp boat, used in a river or harbor for transporting passengers. A *Punt* is a flat-bottomed boat, chiefly used for fishing on a fresh water river. A *Skiff* is a small sharp-nosed boat, used in rivers. A *Dingy* is a very small

stiff boat used by yachts. A *Yacht* is a pleasure sailing-boat. A *Lugger* is a boat which is furnished with sails of a peculiar cut. A *Funny* is a small light boat used in river rowing, and made with her bow and stern nearly alike.

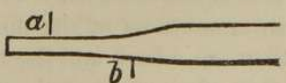
THE COMPONENT PARTS OF BOATS.

Rowing boats consist of the bows (1); the stem, or entrance (2); the stern (8), where are the rudder and the lines for steering; the rowlocks (3), for giving purchase to the oars; and the thwarts, or seats (4). At the bottom are the foot-boards (5), which are easily removed, in order to bail out any water which may leak into the boat. Besides these parts there is a board placed across the boat for the feet of the rower, called a stretcher. The whole boat is composed of one or more planks, called streaks, nailed upon a light oak framework, called the timbers, or ribs; and the upper streak, upon which the rowlocks are placed, is called the wale-streak. Boats with two rowlocks opposite each other are called sculling boats, and are propelled by a pair of light oars called sculls, the art being called "sculling." When a boat is fitted with a pair of rowlocks not opposite to each other, it is called a pair-oared boat. If with two in the middle opposite each other, and two others, one before and the other behind, but not opposite each other, it is called a *randan*. When a boat has four rowlocks, none of which are opposite one another, it is called a four-oared boat, and so on up to ten oars, which is the utmost limit in common use for any kind of boat but the pleasure barge, which sometimes has twenty-four oars. The rowlock nearest the bow is called the bow rowlock, or No. 1; the next No. 2, and so on; and the oars used in them receive the same number, the one nearest the stern being called the "stroke oar." The rowlocks in river and sea boats are somewhat different in shape though identical in principle, both consisting of a square space of about the breadth of a man's hand, and both lying on the wale-streak; but in river boats being generally bounded before and behind by a flat piece of oak or ash called, respectively, the thowl-pin and stopper; whilst in sea boats they are merely common round wooden pins dropped into holes made in the wale-streak, but still receiving the same names. The thowl-pin is for the purpose of pulling the oar against, whilst the stopper prevents the oar from slipping forward when the rower is pushing it in that direction after the stroke.



THE OARS AND SCULLS.

A scull is a small oar used with one hand, and requiring a pair, as in the case of oars, one being placed in the rowlock on each side the boat, and the pair being used by one person with his right and left hands. Oars are used by both hands, and a pair-oared boat consequently requires two oarsmen; a four-oared boat four, and so on. Both sculls and oars consist of the same parts, except that the handle of the *oar* is made long enough for both hands, as at (*b*). In every case there is a rounded handle (*a b*), a loom square in form, and extending from the handle to the button, or about one-third of the length of the oar; and beyond the button is the blade, which is first nearly round, and then gradually widens, until it assumes the form best adapted for laying hold of the water, which is now found to be broad



rather than long, as was formerly thought to be desirable. The button is a piece of leather nailed on to prevent the oar from slipping through the rowlock, but only used in river rowing, as it is not adapted for the rough work which is often met with in sea rowing.

SEA ROWING.

This is necessarily less elegant than river rowing, because of the rough nature of the element on which the exercise is pursued. The oar must be held firmly in the hands, the inside hand being placed at (*b*), and the outside at (*a*), and both hands grasping the oar between the thumbs and fingers. The whole art consists in the crew moving backward and forward together, called "swinging," and laying hold of the water as well as they can, taking care to avoid pulling in the air with great force when there is a trough or interval between two waves, and on the other hand equally avoiding a heavy wave, which has a tendency to dash the oar out of the hand. All this requires practice in the rowers, and also in the steersman, called the coxswain, who should watch for the high waves, and warn his men when a heavy one is coming. He should also take care to cross the roll of the sea as much as possible, so as to avoid being struck on the side of the boat called "the counter," which would either swamp her, or else knock the oars out of the rowlocks. In this kind of rowing, the "feathering" of the oar, to be presently described, is not attempted, on account of the roughness of the water, but it merely is pulled steadily, but strongly, backward, and is then pushed forward in the rowlocks.

RIVER ROWING.

The art of river rowing is capable of a high degree of elegance, and few sights are more pleasing to a lover of graceful forms than that of a crew of young men rowing well together and in good style. To do this requires great practice, and attention to a few essential points, which I will here endeavor to describe.

MANAGEMENT OF THE OAR.

The rower should, as far as possible, take some good oarsman for his model, and endeavor to imitate him in every respect, which is the only mode of acquiring a good style. Description is useful in putting the learner in the way of acquiring what is to be taught, but it is not all-sufficient for the purpose. In the first place, the learner should place himself square on the seat, with his feet straight before him, and the toes slightly turned out. The knees may either be kept together, or separated considerably, the latter being, in our opinion, the better mode, as it allows the body to come more forward over the knees. The feet are to be placed firmly against the stretcher, which is to be let out or shortened, to suit the length of the individual; and one foot may be placed in the strap which is generally attached to the stretcher in modern boats. The oar is then taken in hand, raising it by the handle, and then either at once placing it in the rowlock, or else first dropping it flat on the water, and then raising the handle it may gently be lowered to its place. The outside hand is placed upon the handle at (*a*), *with the thumb as well as the fingers above it*, while the other hand firmly grasps it lower down at (*b*), keeping the nut toward the person. The arms are now quickly thrust forward till they are quite straight at the elbows, *after which* the back follows them by bending forward at the hips, carefully avoiding any roundness of the shoulders. When the hands have reached their full stretch they are raised, and the blade quietly and neatly dropped into the water; immediately after which, and with the water just covering the blade, the body is brought back with a graceful yet powerful action, till it reaches a part a little behind the perpendicular of the back of the seat, when the hands are brought back to the ribs, the elbows gliding close by the hips; and at the last moment, as the hand touches

the rib, the wrist of the inside hand is depressed, the knuckles being at the same time brought against the chest, and the oar is made to rotate in the rowlock, which is called "feathering" it, and by which it is brought cleanly out of the water. The next action is to push the oar rapidly forward again, first, however, restoring it to its original position in the rowlock, which is effected by raising the wrist, and then darting the arms forward till the elbows are quite straight, which brings the rower to where we started from in the description. In "backing water" the reverse of these actions takes place. The oar is first reversed in the rowlock, and then it is *pushed* through the water with as much power as is needed, and *pulled* through the air. When the oars on one side are pulled, and those on the other are backed, the boat is made to turn on its own water. "Holding water" is effected by the oars being held in the position of backing without moving them.

THE ESSENTIAL POINTS IN ROWING.

1st. To straighten the arms before bending the body forward; 2d, to drop the oar cleanly into the water; 3d, to draw it straight through at the same depth; 4th, to feather neatly, and without bringing the oar out before doing so; 5th, to use the back and shoulders freely, keeping the arms as straight as possible; and 6th, to keep the eyes fixed upon the rower before them, avoiding looking out of the boat, by which means the body is almost sure to swing backward and forward in a straight line.

MANAGEMENT OF THE BOAT,

Every boat without a rudder is manœuvred in the water, either by pulling both sides alike, in which case it progresses in a straight line, or by reversing the action of the oars, equally on both sides, pushing them through the water instead of pulling them, and called backing water, when the boat recedes; or by pulling one side only, on which the boat describes a segment of a circle, which is made smaller by pulling one oar, and backing the other. By means of a rudder the boat is made to take a certain course, independent of the rowers, called "steering," the chief art in which consists in keeping the rudder as still as possible, by holding the lines "taut," and avoiding pulling them from one side to the other more than is absolutely necessary. Some steersmen think it necessary to swing backward and forward with a great effort, but this is quite useless, and the more still they keep the better. Every coxswain should know the course of the stream or tide; and when meeting other boats he should, if he is going down stream, give them the side nearest the shore, so as to allow them the advantage of the slack water, which is quite prejudicial to him. When a crew are steered by a competent coxswain, they ought to be perfectly obedient to his commands, rowing exactly as he tells them. His orders are communicated by the following words, viz. when desiring his crew to row he says, "Pull all;" or if wishing any one oar to be pulled, he says "Pull bow," or "Pull, No. 3," or 4, &c., as the case may be. If they are to stop rowing, he says "Easy all," or for any one oar, "Easy bow," or No. 2. The same kind of order is conveyed when "backing" or "holding water" is desired; the only variation, as before, being between confining his order to any one or more oars, or extending it to all. In this way all the evolutions practicable on the water are managed, and the coxswain has complete control over the boat, being able to cause her to be rowed slowly or quickly, or to be stopped, backed, or turned on her own centre.

ROWING TOGETHER

Is of the utmost importance to the success of a boat when she is manned by a crew; and they should all endeavor to attain the same style as the "stroke-oar," who should

be the best in the boat, and as free from faults as possible. In a four or eight oared boat, every one of the crew would do well to imitate his stroke by rowing with him occasionally in a pair-oared boat, or else, if this is not practicable, by pulling behind a waterman who rows in the same style as the stroke-oar. In this way an uniform kind of rowing is attained, and the boat is propelled equally by all at the same time. The great object is for all to lay hold of the water at the same moment, and pull their oars through it and out with the same power and at the same time; this is called "keeping stroke." "Keeping time" means "all feathering" the oar together, by which the peculiar click of the oars in the rowlocks is made exactly at the same instant. When this is not done precisely together, the "time" is defective, and the ear at once detects the error; but even when the "time" is ever so good, the want of keeping stroke is fatal to the speed of any boat, however good the individual rowers may be.

CAUTIONS TO YOUNG ROWERS.

Do not be over anxious to avoid "catching crabs," which is an event likely to occur in early practice; and should it happen, throw the oar quickly upward out of the rowlock, and no mischief will ensue. The young rower should be at once shown how to free his oar in this way, and then he may pull with that freedom from restraint which is necessary to produce a good style. Do not stand on the seats, or lean out of the boat, and never attempt any practical jokes on the water, as it is a dangerous element to trifle with.

SWIMMING.

SWIMMING is the most useful of all athletic accomplishments, for by it human life is frequently saved which might have been sacrificed. It is also useful in the development of muscular strength, as well as highly beneficial to the nervous system, and reinvigorating the vital functions when falling into decline. In places near the sea or rivers, to know how to swim is an indispensable accomplishment. The ancients, particularly the Greeks, held the art in such high estimation as to bestow rewards upon the most perfect swimmers.

From the little familiarity with immersion in water which the inhabitants of our over-grown towns and cities possess, a very great proportion of the population are but little acquainted with the art of swimming, and with the mode in which they should conduct themselves when risk of drowning presents itself. Americans should be good swimmers, exposed as they are in their journeys by lakes and rivers, in their migrations, and in their commercial pursuits, and in visiting other lands, so frequently to perils by water; yet, while most towns in Europe abound in baths and swimming schools, in America they are still few in number.

Most animals have a natural aptitude for swimming, not found in man; for they will at once swim when even first thrown into the water; but it will be noticed that the motions they then employ much more resemble their ordinary movements of progression than those made use of by men under similar circumstances.

The children of many uncivilized nations, especially in warm climates, frequent the water from an early age, and seem almost to swim by instinct. The remarkable powers of endurance, agility, and strength manifested while in the water by many individuals of savage tribes are well known, — powers which enable them to come off victorious in their struggles.

The art of swimming is by no means difficult of attainment, and several authors have supplied directions to facilitate its acquisition. Above all things, self-confidence (not rashness leading into danger) is required; and, when this is possessed, all difficulty soon ceases. Dr. Franklin, himself an expert swimmer, recommended that familiarity with the buoyant power of water should be gained; and to acquire this, he directs the learner, after advancing into the water breast high, to turn round, so as to bring his face to the shore: he is then to let an egg fall in the water, which, being white, will be seen at the bottom. His object must now be, by diving down with his eyes open, to reach and bring up the egg. He will easily perceive that there is no danger in this experiment, as the water gets shallower, of course, toward the shore, and because whenever he likes, by depressing his feet, he can raise his head again above water.

The thing that will most strike beginners will be the great difficulty experienced in forcing themselves through the water to reach the egg, in consequence of the resistance water offers to progress; and this is indeed the practical lesson derivable from the experiment; for the learner becomes aware of the very great sustaining or supporting power of water, and hence has confidence. This sustaining power of water is shown under many circumstances: thus, a stone which on land requires two men to remove it, might in water be easily carried by one. A man may walk without harm on broken glass in deep water, because his weight is supported by the water. This knowledge of fluid support constitutes the groundwork of all efforts in swimming, or in self-preservation from drowning.

Should a person accidentally fall into the water, provided he retained his presence of mind, a knowledge of the above facts would save him probably from a "watery grave." The body being but very slightly heavier than the volume of water it displaces, will, with a very slight motion of the hands under water, float. When the chest is thoroughly inflated with air, it is lighter than water, and floats naturally, having half the head above water: so that the person exposed to danger has only to turn upon his back, in order that that half, consisting of his face, with the mouth and nostrils, be above the water line.

But to float thus upon the water, the greatest care must be taken not to elevate the arms or other parts above its surface; and it is in remembering this caution, that presence of mind in the time of dangers confers so much benefit; for, in the moment of terror, a person thrown into the water almost instinctively stretches out his hands aloft to grasp at some object, thereby depriving himself of a means of proceeding which would frequently keep him afloat until succor arrived. By elevating any part of the body in this way, we remove it from the support afforded by the water and thus render sinking inevitable.

Dr. Arnot, in allusion to this subject, says that many persons are drowned who might be saved, for the following reasons:—

1. From their believing that their constant exertions are necessary to preserve the body from sinking, and their hence assuming the position of a swimmer, with the face downward, in which the whole head must be kept out of the water, in order to enable them to breathe; whereas, when lying on the back, only the face need be above the water.

2. From the groundless fear that water entering by the ears may drown as if it entered by the mouth or nose, and their employing exertions to prevent this.

3. The keeping of the hands above water, already alluded to.

4. Neglecting to take the opportunity of the intervals of the waves passing over the head, to renew the air in their chest by an inspiration.

5. Their not knowing the importance of keeping the chest as full of air as possi-

ble, which has nearly the same effect as tying a bladder full of air around the neck would have.

But although floating in water is sufficient to preserve from immediate danger, this will not alone enable us to swim. To swim, does not mean simply to float, but to progress; and progression by this means depends, like the flight of birds, upon the law in Mechanics of every action being followed by a corresponding reaction, but in an opposite direction; and thus, as the reaction of the air compressed by the downward action of the bird's wing, causes it to mount aloft in proportion to the force it communicates by that motion; so the backward stroke communicated by the simultaneous movement of the hands and feet of the swimmer, causes his forward progress in the water. When once familiarized with the support derived from the water itself, he soon learns to make the stroke correctly, especially if aided and supported by some more experienced friend,—a far better assistant than corks and bladders.

PLACES AND TIMES FOR BATHING AND SWIMMING.

It is presumed that most young lads who go to bathe will take the opportunity of learning to swim. In crowded cities there are but few places in which the youngster can learn the art; but in the country there are many rivers, ponds, canals, or lakes, where both bathing and swimming may be indulged in without annoyance. The best kind of place for bathing is on a shelving gravelly shore, on which the water gradually deepens, and where no awkward sweep of current may take the bather off his legs. The spot should also be free from holes, weeds, and stones; and a muddy bottom is to be avoided by all means. Should the banks of such a spot be shaded by a few trees, and should there be close by an open space for a run on the grass after the bathe, so much the better; and the young learner will then have the chief inducement to venture the sudden dip or headlong plunge.

The best time of the day for bathing or swimming is either before breakfast, between the hours of four and seven in the summer-time, or between eleven and twelve o'clock in the forenoon. Delicate persons should not bathe early in the morning; and it would be perhaps well to munch a biscuit before early bathing at all times. No one should ever think of entering the water on a full stomach, or immediately after dinner, and never when over-heated and exhausted by fatigue. He should also avoid entering it when cold, or with a headache. Before bathing, it is best to take a moderate walk of a mile, and, while the system is in a glow, to undress quickly and plunge in. It is bad to walk till you get hot, then to sit down and cool, and afterward enter the water; many have lost their lives by this. It is also very wrong to enter the water during rain, as the clothes are often wet or damp, which gives the bather cold.

ENTERING THE WATER.

Having stripped the body, the bather should select the best place on the bank for going down to the stream; and then, proceeding cautiously but quickly, wade up to his breasts, turn his head to the shore, and dip. He then technically, as the boys say, gets his pinch over. Should he not be man enough to proceed in this way, he should, as soon as he gets his feet wet, splash some water over his head, and go into the water more gradually, and try the rapid rush and dip when he gets bolder. He must not attempt to swim or strike out till he can master the feat of going into the water up to his arm-pits, and till he feels himself confident and void of timidity.

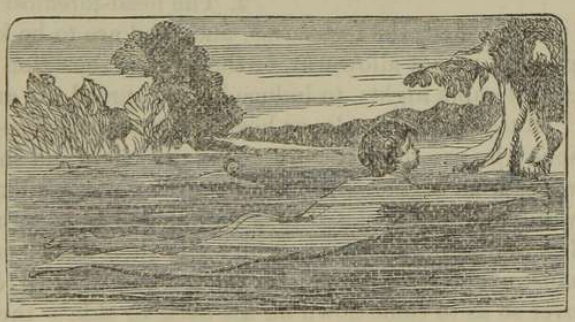
AIDS TO SWIMMING.

Many aids have been used for the benefit of young swimmers: corks and bladders fastened under the arms are the common ones; but they offer dangerous temptations

for bathers to go out of their depth, and then should cramp, cold, or any other accident occur, the event may be fatal. Besides, these aids often slip about from one place to the other. We remember, in our younger days, of the "corks" slipping to the hips, and of seeing a young friend, now an old man, suspended in the water with his head downward; while collapsing of bladders and of air-jackets is by no means uncommon. The best aid to a young swimmer is a judicious friend, himself a good swimmer, who will hold up his head, when he strikes off, by the "tip of the finger to the tip of the chin," and who at the same time will show him how to strike off, and how to manage his hands and feet. It is not a bad plan to put out a spar from a boat, to which a rope is attached, which the young learner may make use of by affixing it to a belt round his body under his arms, which will afford him support while he learns to strike his legs in the water. The rope may also be held in the hand of a friend, by the side of the boat, and the learner may strike off hands and feet as the boat proceeds. The plank is a dangerous aid, from its tendency to slip about, and to take the swimmer out of his depth; and, although he has many advantages, is very unsafe. The safest plan of all is, as we have before stated, for the learner to advance gradually up to his arm-pits in the water, and then, turning about, to strike slowly out toward the shore, taking care to keep his legs well up from the bottom. Rigid perseverance in this course will in a very short time enable the youngster to feel himself afloat, and moving at "all fours,"—a delight equal to that experienced by the child who first feels that he can walk from chair to chair.

STRIKING OFF AND SWIMMING.

In striking off, the learner, having turned himself to the shore, as before recommended, should fall toward the water gently, keeping his head and neck perfectly upright, his breast advancing forward, his chest inflated; then withdrawing the legs from the bottom, and stretching them out, strike the arms forward in unison with the legs. The back can scarcely be too much hollowed, or the head too much thrown back, as those who do otherwise will swim with their feet too near the surface, instead of allowing them to be about a foot and half deep in the water. The hands should be placed just in front of the breast, the fingers pointing forward and kept close together, with the thumbs to the edge of the fore-fingers: the hands must be made rather concave on the inside, though not so much as to diminish the size. In the stroke of the hands, they should be carried forward to the utmost extent, taking care that they do not touch the surface of the water; they should next be swept to the side, at a distance from, but as low as, the hips; and should then be drawn up again, by bringing the arms toward the side, bending the elbows upward and the wrists downward, so as to let the hands hang down while the arms are raising them to the first attitude.



HOW TO MANAGE THE LEGS.

The legs, which should be moved alternately with the hands, must be drawn up with the knees inward, and the soles of the feet inclined outward; and they should then be thrown backward, as widely apart from each other as possible. These motions

of the hands and legs may be practiced out of the water; and whilst exercising the legs, which can only be done one at a time, the learner may rest one hand on the back of a chair to steady himself, while he moves the opposite leg. When in the water, the learner must take care to draw in his breath at the instant that his hands, descending to his hips, cause his head to rise above the surface of the water; and he should exhale his breath at the moment his body is propelled forward through the action of the legs. If he does not attend precisely to these rules, he must invariably have a downward motion, and, as the boys say, swim furthest where it is deepest.

PLUNGING AND DIVING.

There are two kinds of plunging; that belonging to shallow, and that belonging to deep water. In shallow-water plunging, the learner should fling himself as far forward as possible into the stream at a very oblique angle: and when he touches the water, he should raise his head, keep his back hollow, and stretch his hands forward. In the deep-water plunge, his body is to descend at a greater angle; his arms are to be stretched out, his hands closed and pointed, and his body bent, so that his nose almost touches his toes.

Diving is one of the greatest amusements connected with swimming. There are many kinds; the two most common and easiest and necessary modes of going below the surface, are —

1. The feet-foremost jump.
2. The head-foremost jump.

In the first, the legs, arms, and head are to be kept perfectly rigid and stiff. The pupil must not allow fear, or the strange sensation felt in the bowels in leaping from considerable hights, to induce him to spread the arms or legs, or to bend his body.

In the second mode, or head-foremost plunge,— which is the safest mode for persons who are heavily built about the chest and shoulders, if they have to enter the water from hights,— the head is drawn down upon the chest, the arms stretched forward, and hands closed to a point: and as soon as the swimmer feels that he has left the bank, his knees, which till then were bent, are to be stiffened. The diver must avoid striking on the belly — the general consequence of fear; and turning over so as to come down on his back or side — the consequence of pushing with the feet. When he has gone as deep as he wishes, the arms are to be raised and pressed downward.

SWIMMING UNDER WATER.

When under the water, the swimmer may either move in the usual way, or keep his hands stretched before him, which will enable him to cut the water more easily, and greatly relieve his chest. If he observes that he approaches too near the surface of the water, he must press the palms of his hands upward. If he wishes to dive to the bottom, he must turn the palms of his hands upward, striking with them repeatedly and rapidly whilst the feet are reposing; and when he has obtained a perpendicular position, he should stretch out his hands like feelers, and make the usual movement with his feet, then he will descend with great rapidity to the bottom. It is well to accustom the eyes to open themselves under the water, at least in those beds of water that admit the light, as it will enable the swimmer to ascertain the depth of water he is in.

SWIMMING ON THE SIDE.

In this the body is turned either on the left or right side, while the feet perform their usual motions. The *arm from under* the shoulder stretches itself out quickly, at the same time that the feet are striking. The other arm strikes at the same time with the impelling of the feet. The hand of the latter arm begins its stroke on a level with the head. While the hand is again brought forward in a flat position, and the feet are contracted, the stretched-out hand is, while working, drawn back toward the breast, but not so much impelling as sustaining. As swimming on the side presents to the water a smaller surface than on the waist, when rapidity is required, the former is often preferable to the latter.

SWIMMING ON THE BACK WITHOUT EMPLOYING THE FEET.

This is twofold: 1. *In the direction of the feet.* The body is placed in a horizontal position, the feet are stretched out stiffly, and the heels and toes are kept in contact; then the body is to be somewhat curved at the seat, the hands are to be stretched flatly forward over the body, and, slowly striking in small circles, the loins are somewhat drawn up at each stroke. 2. *In the direction of the head.* The body is placed horizontally, but somewhat curved at the seat, the head in its natural position, the arms are kept close to the body, with the elbows inclined inward, and the hands describe small circles from the back to the front, at about a foot and half from the hips. These modes serve to exercise and strengthen the arms in an extraordinary degree without in the least fatiguing the breast.

FLOATING.

The body is laid horizontally on the back, the head is bent backward as much as possible, the arms are stretched out over the head in the direction of the body, the feet are left to their natural position; if they sink, the loins must be kept as low as possible. In this position, the person, who is specifically lighter than water, remains, and may float at pleasure. The lungs should be kept inflated, that the breast may be distended and the circumference of the body augmented. In order not to sink while in the act of taking breath, which the greater specific weight of the body would effect, the breath must be quickly expelled, and as quickly drawn in again, and then retained as long as possible; for, as the back is in a flat position, the sinking, on account of the resistance of the water, does not take place so rapidly but the quick respiration will restore the equilibrium before the water reaches the nose.

TREADING WATER.

This is a perpendicular position of the swimmer, and is of great use to enable him to save a person from drowning. It is in general thought to be extremely difficult, but it is very easy. There are two ways of performing the action: in the first the hands are compressed against the hips, and the feet describe their usual circle; the other mode consists in not contracting both legs at the same time, but one after the other, so that while the one remains contracted the other describes a circle. In this

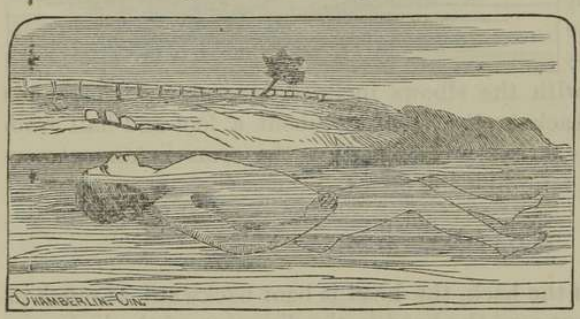
mode, however, the legs must not be stretched out, but the thighs are placed in a distended position, and curved as if in a half-sitting posture.

THE FLING.

The swimmer lays himself flat upon his waist, draws his feet as close as possible under the body, stretches his hands forward, and with both feet and hands beating the water violently at the same time, raises himself out of the water. In this manner one may succeed in throwing himself out of the water as high as the hips. This exercise is very useful, and may save life in an extremity by catching a rope or any other object that hangs from above the surface of the water, or from any perpendicular height.

SWIMMING ON THE BACK.

In this the swimmer turns upon his back in the water by the combined motion of the arm and leg, and extending his body, his head being in a line with it, so that the back and upper part of the head may be immersed, while the face and breast are out of the water. The hands should be placed on the thighs straight down, and the legs moved as in forward swimming, taking care that the knees do not rise above the surface in striking them out. Sometimes the hands are used after the motion of a wing or fan, by which a slight progression is also made at the same time that the surface of the body is well lifted out of the water.



THRUSTING.

In the thrust the swimmer lies horizontally upon his waist, and makes the common motions in swimming. He then simply stretches one arm forward, as in swimming on the side, but remains lying upon the waist, and, in a widely described circle, he carries the other hand, which is working under the breast, toward the hip. As soon as the arm has completed this motion, it is lifted from the water in a stretched position, and thrown forward in the greatest horizontal level, and is then sunk with the hand flat into the water; while the swimmer thus stretches forth the arm, he, with the other hand stretched as wide as possible, describes a small circle in order to sustain the body; after this he brings his hand in a largely described circle rapidly to the hip, lifts the arm out of the water, and *thrusts* it forward. During the describing of the larger circle the feet make their movements. To make the thrust beautifully, a considerable degree of practice is required. This mode of swimming is useful where a great degree of rapidity is required for a short distance.

THE DOUBLE THRUST.

In the performance of this the arm is thrust forward, backward, and again forward without dipping into the water; in the meantime the stretched-forth arm describes two circles before it begins the larger one.

TO SWIM LIKE A DOG.

In this motion each hand and foot is used alternately as a dog uses them when swimming, as the term implies. The hands are alternately drawn toward the chin in a compressed form, and then expanded and slightly hollowed, with fingers close, and as they strike the water the feet are likewise drawn toward the belly, and struck backward with a kind of kick. This mode of swimming is of use to relieve the swimmer from time to time when going a distance.

THE MILL.

The swimmer lays himself on his back and contracts himself so that the knees are brought almost to the chin, and while one of the hands keeps the equilibrium by describing circles, the other continues working. Thus the body is kept turning round more or less rapidly.

THE WHEEL BACKWARD AND FORWARD.

In the *forward wheel* the hands are put as far backward as possible, and so pressed against the water that the head is impelled under the surface, and the feet, by a pressure of the hands in a contrary direction, are rapidly flung above the head, which in this manner is rapidly brought again to the surface.

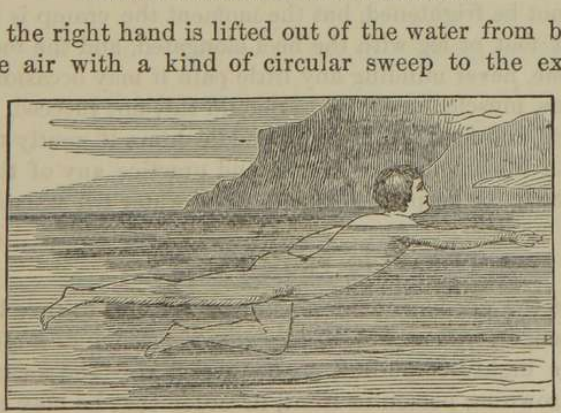
In the *backward wheel* the swimmer lies upon his back, he contracts himself, the hands, stretched forward as far as possible, describe rapidly small circles, the feet rise, and as the point of equilibrium has been brought as near as possible to the feet, the head sinks and the feet are thrown over.

TO SWIM WITH ONE HAND.

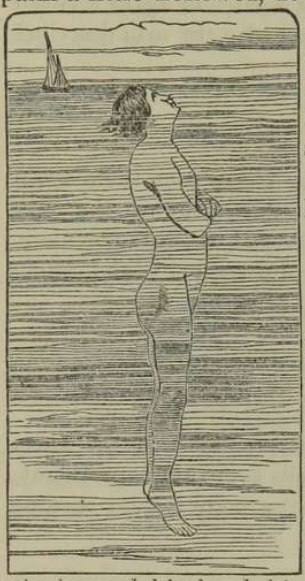
The learner to do this swims on one side, keeps his feet somewhat deeply *sunk*, while the arm which in the meantime ought to work is kept quiet — and might even be taken out of the water. It is a good practice of strength to carry, first under and then over the water, a weight of four or eight pounds.

HAND OVER HAND SWIMMING.

In this process, the right hand is lifted out of the water from behind, swung forward through the air with a kind of circular sweep to the extent of its reach

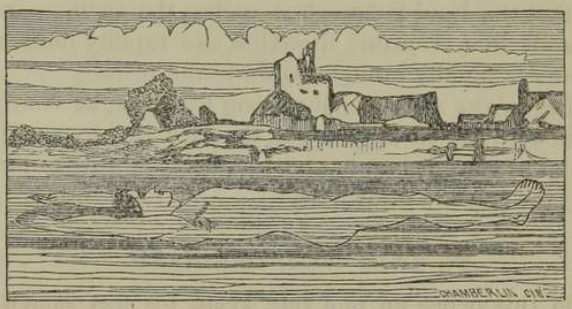


forward, then dropped into the water edgeways, and immediately turned, with the palm a little hollowed, downward, the body being at the same time thrown a little on one side, and the right leg struck out backward to its full extent. The hand descends toward the thigh, and then passes upward through the water in a kind of curve toward the surface. The left hand and leg perform a similar movement alternately with the right, and the measure of progression attained by these combined similar movements is very considerable.



BALANCING.

When the swimmer has obtained ease and confidence in the water, he will find many things easy which before he deemed impossible. Balancing is one of these. To perform it he has only, when out of his depth, to fall gently back with his chin elevated to a line passing exactly through the centre of his body from the chin to the toes, then, folding his arms and remaining perfectly motionless, he may suspend himself perpendicularly; but if he should extend his arms backward, and pass them gradually beyond his head, his toes, tips of his knees, abdomen, and part of his chest, with the whole of his face will appear, and he will be balanced and float horizontally without the slightest motion.



THE CRAMP.

The cramp generally proceeds from acidity of the bowels, arising from a bad state of the stomach, or from the effects of the cold water on the muscular system. Some persons are very subject to it on slight occasions, and such persons will do well never to go out of their depth. But should a tolerable swimmer be seized with the cramp, he should not be frightened, but the moment the cramp is felt in the foot or leg, strike out that foot or leg with the heel elongated, and the toes drawn upward toward the shin-bone, never minding any little pain it may occasion, as he need not fear breaking a bone, muscle, or tendon. Should this not succeed, he should throw himself on his back, and float quietly, and paddle himself gently to the shore. He may also swim with his hands like a dog, and practice any of the motions of the upper part of the body for keeping his head above water till assistance arrives.

SAVING FROM DANGER.

Above all things the good swimmer should be anxious to save life, and to rescue those who are in danger, *without himself becoming the victim, as it often happens.* The following rules are highly important to be observed. The swimmer must avoid approaching the drowning person in front, in order that he may not be grasped by

him; for whatever a drowning person seizes, he holds with convulsive force, and it is no easy matter to get disentangled from his grasp; therefore he should seize him from behind, and let go of him immediately if the other turns toward him. His best way is to impel him before him to the shore, or to draw him behind; if the space to be passed be too great, he should seize him by the foot and drag him, turning him on his back. If the drowning person should seize him, there is no alternative for the swimmer than to drop him at once to the bottom of the water, and there to wrestle with his antagonist; the drowning man, by a kind of instinct to regain the surface, when drawn down to the bottom, usually quits his prey, particularly if the diver attacks him there with all his power.

For two swimmers the labor is easier, because they can mutually relieve each other. If the drowning person has still some presence of mind remaining, they will then seize him one under *one arm, and the other under the other*, and without any great effort in treading water, bring him along with his head above water, while they enjoin him to keep himself stretched out, and as much as possible without motion.

SPORTS AND FEATS IN SWIMMING.

1. *The Float.* — In this sport one swimmer lays himself horizontally on the back, with the feet stretched out, the hands pressed close to the body, and the head raised forward. The other swimmer takes hold of him by the extremity of the feet, and, swimming with one hand, impels him forward. The first remains motionless.

2. *The Plank.* — One swimmer lays himself horizontally as before, another lays hold of him with both his hands, immediately above the ankle, and pulls him obliquely into the water, while he extends himself and impels himself forward; thus both the swimmers drop rapidly the one over the other.

3. *The Pickaback Spring.* — One swimmer treads the water, the other swims near him behind, places his hands upon the shoulders of the first, and presses him down. He then leaves his hold, and puts his feet upon his shoulders, and, flinging himself out of the water, pushes the first toward the bottom. Now he treads water, and the first performs the part of the second, and so on.

4. *The Shove.* — Two swimmers place themselves horizontally on their backs, the legs are strongly extended, and the soles of the feet bear against each other; each impels forward with all his power, and he who succeeds in pushing back the other is the conqueror.

5. *The Wrestle.* — Two swimmers place themselves opposite to each other, tread water and hold their right hands in the air; the question is, who shall first force his opponent under the water by pressure. Only the head of the adversary is to be touched, and that only by pressure.

BERNARDI'S SYSTEM OF UPRIGHT SWIMMING.

This system has been introduced into many of the naval and military colleges on the Continent, and has for its distinguishing characteristic the swimming in an upright position. The first object is to teach the pupil how to float in an upright posture. He is taught the use of his legs and arms for balancing the body in water, and then to imitate as much as possible the movement of the limbs upon land. He then pays great attention to the movements of the head, the smallest inclination of which on either side instantly operates on the whole body. He next learns the method of using his arms and legs; and for this purpose is directed to stretch his arms laterally on each side, and then, by placing one foot forward and the other backward, he is enabled to float easily and progress slowly. The same circular sweep of the hands and the action of the legs are next practiced, and the feet should

be struck downward and a little forward, when the movement of the arms is the reverse of the old methods of swimming. The young swimmer who has gone through the various courses laid down by us, will easily comprehend the principle of Bernardi's system, and as easily carry it out if he will take the trouble. It is much less fatiguing than the old plan, and can be carried on for a longer period, and is of invaluable service to troops who may have to cross rivers or dykes, and to all who may be exposed to the various accidents of flood and field.

THE PRUSSIAN SYSTEM OF PFUEL.

The best of all methods for teaching swimming is that originally introduced by General Pfuel into the Prussian swimming-schools. By this method a person may be made a very good swimmer in a very short time. The apparatus for teaching consists of a hempen girdle five inches in width, of a rope from five to six fathoms in length, of a pole eight feet long, and a horizontal rail fixed about three-and-a-half feet above the platform, on which the teacher stands, to rest the pole on.

The depth of the water in the place chosen for swimming should, if possible, be not less than eight feet, and the clearest and calmest water should be selected. The pupil wears drawers, fastened by a band above the hips and covering about half the thighs. He is now placed near the horizontal rail, his hands resting upon it, while the teacher shows him the motion which he will have to make with his legs in the water. This he does by guiding the motion of one leg while the pupil rests on the other. This motion we shall explain presently.

The swimming girdle, about five inches wide, is now placed round the pupil's breast, so that its upper edge rests on the chest, without getting tight. The teacher takes the rope, which is fastened to the ring of the girdle, in his hand, and directs the pupil to leap into the water, keeping the legs straight and close together, and the arms close to the body, and, what is very important, to breathe out through the nose as soon as his head rises above the water, instead of breathing in first, as every man naturally does after a suspension of breath. The object of this is to prevent the water from getting into the throat, which produces an unpleasant feeling of choking and headache. This expiration soon becomes perfectly natural to the swimmers.

The pupil is next invited to leap. He is drawn up immediately by the rope, pulled to the ladder, and allowed to gain confidence gradually. The rope is now fastened by a noose to the end of the pole, the other end of it being kept in the hand of the teacher; the pole is rested on the horizontal rail, and the pupil stretches himself horizontally on the water, where he remains supported by the pole. Next the arms are extended stiffly forward, the hands clasped, the chin touches the water; the legs are also stiffly stretched out, the heels being together, the feet turned out, and the toes drawn up. This horizontal position is important, and must be executed correctly. No limb is permitted to be relaxed.

The movement of the limbs is now taught; that of the legs is taught first. The teacher first says, loudly and slowly, "One;" when the legs are slowly drawn under the body; at the same time the knees are separated to the greatest possible distance, the spine is bent downward, and the toe kept outward. The teacher then says briskly, "Two;" upon which the legs are stiffly stretched out with a moderate degree of quickness, while the heels are separated, and the legs describe the widest possible angle, the toes being contracted and kept outward. The teacher then says, quickly, "Three;" upon which the legs, with the knees held stiffly, are quickly brought together, and thus the original position is again obtained.

The point at which the motions "two" and "three" join are the most important,

because it is the object to receive as large and compact a wedge of water between the legs as possible; so that when the legs are brought together their action upon this wedge may urge the body forward. In ordinary cases of swimming, the hands are not used to propel, but merely to assist in keeping on the surface. By degrees, therefore, "two" and "three" are counted in quick succession, and the pupil is taught to extend the legs as widely as possible. After some time, what was done under the heads "two" and "three" is done when "two" is called out. When the teacher sees that the pupil is able to propel himself with ease, which he frequently acquires the power of doing in the first lesson, and that he performs the motions already mentioned with regularity, he teaches the motions of the hands, which must not be allowed to sink, as they are much disposed to do while the motion of the legs is practiced.

The motion of the hands consists of two parts. When the teacher says "One," the hands, which were held with the palms together, are opened, laid horizontally an inch or two under water, and the arms are extended till they form an angle of 90°; then the elbow is bent, and the hands are brought up to the chin, having described an arch downward and upward; the lower part of the thumb touches the chin, the palms being together. When the teacher says "Two," the arms are quickly stretched forward, and thus the original horizontal position is regained. The legs remain stiffly extended during the motion of the hands. If the motion of the hands is carefully and correctly performed, the legs and arms are moved together; so that while the teacher says "One," the pupil performs the first motion of the hands and legs; when he says "Two," the second and third motions of the feet, and the second of the hands.

As soon as the teacher perceives that the pupil begins to support himself, he slackens the rope a little, and instantly straightens it if the pupil is about to sink. When the pupil can swim about ten strokes in succession, he is released from the pole, but not from the rope. When he can swim about fifty strokes, he is released from the rope too; but the teacher remains near him with a long pole until he can swim 150 strokes in succession, so that, should he sink, the pole is immediately held out to him. After this he may swim in the area of the school, under the superintendence of the teacher, until he proves that he can swim half an hour in succession, so that, should he sink, the pole is immediately held out to him; he is then considered fit to be left to himself.

Such are the outlines of the German plan of swimming; and, much as we dislike educational quackery, we are still obliged to confess that schools for swimming might be, and ought to be, established in this country in unison with this system. No well-conducted boarding-school ought to be without a swimming-school; and the hints above given will be exceedingly useful to the swimmer who has to teach himself, as well as to the gymnastic tutor who has to teach others the art; and we conclude by earnestly recommending the accomplishment of swimming to our young readers.

SUGGESTIONS CONCERNING BOWEL TROUBLES.

SOMETIMES the accumulation of fæcal matter in the large intestine is so considerable that the bowel becomes almost paralyzed, and the individual cannot expel anything by the strongest efforts he can make. Under these circumstances you may inject some gruel, or water, or soap and water, or castor oil and soap and water, into the bowel, and in considerable quantity, without succeeding in exciting reflex action. The fæces remain as it were impacted, and cannot be dis-

lodged by such means. Occasionally the lower part of the large bowel of an old person gets so full and choked by impacted fæcal matter that it overflows as it were, although there is not the slighest effort on the part of the bowel to empty itself. As the bowel does not contract, and has indeed nearly lost its contractile power, the fæcal accumulation must be removed. A sort of scoop, or paper-knife, or the handle of a spoon, or any other convenient instrument of the proper shape and with rounded edges, so as not to cut the parts, may be used to remove the hard fæcal matter. The operation is disagreeable, and sometimes difficult to perform, but it must be undertaken.

When there is reason to think that a person is suffering in health from taking too little fluid, suggest the propriety of taking a certain quantity of water at fixed times. Recommend him to drink a glass of ordinary water on rising, another about eleven o'clock, and another at bedtime.

There is the real and serious objection that ordinary water may be bad and contain typhoid fever or other disease germs. All objections to the water may be removed if it be boiled. Some do not dislike taking warm tea or hot water with their meals. Either often suits the stomach far better than cold fluid, which often checks digestion. In cold weather I have long been in the habit of taking warm water, and have recommended the practice to others, but many prefer to let the water get quite cold. Householders should have every morning a kettle of water that has been boiled for ten minutes or longer and allowed to cool, and then poured on the filter. The boiling renders the water perfectly safe, for it destroys every living organism as well as any animal poisons that may be suspended in it. Never forget that the evils of a bad water supply may be found in the ice you use.

Small doses of purgatives, taken just after food for several days in succession, are often of great use in imperfect action of the bowels. From three to ten grains of Rhubarb, with or without Carbonate of Soda, or five grains of Compound Rhubarb pill, will often be sufficient. Experiment a little, in order to find out the least quantity required to produce the effect desired. Fruit taken daily is of use, but many do not try the plan long enough to succeed. The digestive organs may act sluggishly and require a good deal of humoring. Violent purgatives are worse than useless, and in such cases a moderate purge is often followed by a headache and general upset, lasting perhaps for many days, and succeeded by the sluggish, torpid, imperfectly acting state. There is no difficulty in managing those who eat well and take plenty of exercise, but those who live very moderately, and whose work is intellectual rather than muscular, will require some thought and the exercise of a little ingenuity to get them right.

Nux Vomica, in cases of imperfect action of the bowels, is useful by giving tone to the bowel and stimulating, probably through its action on the nerves, the muscular coat of the intestine. Give of the Extract of Nux Vomica, from a quarter of a grain to a grain. If added to a purgative pill, it helps the action of the large bowel. The Tincture of Nux Vomica may be taken in doses of from five to twenty minims with some Compound Tincture of Bark or other tonic. Decoction of Aloes, Tincture of Senna, Tincture of Rhubarb, are simple remedies often prescribed in doses of from a drachm to half an ounce.

Compound Licorice Powder is much used in Germany and Russia, and is certainly one of the best and safest of ordinary purgative medicines. The *Pulvis Glycyrrhizæ Compositus* contains two ounces of finely powdered Senna and the same quantity of powdered Licorice root, with six ounces of powdered sugar; the German preparation is made as follows:—"Powdered Senna, powdered Licorice, of each 2; powdered Fennel, Sulphur, of each 1; white sugar, 6; mix." The dose is a teaspoonful, carefully mixed in a little water.

Injections for the Bowel.—In making a purgative enema you may use from a half to an ounce of soft or ordinary yellow soap to a pint of warm water; with this two ounces of castor oil or olive oil, or half an ounce of turpentine, may be mixed. Gruel is better than soap and water. If you require to give an aloes or colocynth enema, half a drachm of the first or the same quantity of a drachm of the compound extract of colocynth may be well rubbed down in a mortar with a little water or syrup, and then mixed with a pint of gruel. Two or three drachms of the Confection of Rue, in the proportion of three drachms to a pint, is a good addition in cases where there is much wind in the bowel.

MEDICAL COMPOUNDS,

WITH

DIRECTIONS FOR PREPARING AND USING THEM

BY JOHNSON H. JORDAN, M.D.

PILLS,

Are small globes of solid medicines, chiefly made up because the substances are nauseous, or such as operate in small doses. The powders, etc., are made to combine, by using honey, syrup, soap, extract, mucilage, or conserve of rose, according to the formula, and when the mass is sufficiently tenacious, it is divided into pills.

Ague, No. 1.— Take Quinine, 20 grains; Piperine, 10 grains; Aloes, 20 grains; Rhubarb, 10 grains; Dover's Powders, 10 grains; Cayenne, 10 grains; mix, pulverize, and make into twenty pills, with a little Mucilage of Gum Arabic, or Extract of Gentian or Boneset. To be taken at the rate of one pill an hour when there is no fever, or during intermission, until twelve pills are taken; the balance to be taken on the third day, or next well day. Good as a remedy for the Chills, or Fever and Ague.

Ague, No. 2.—Take Quinine, 12 grains; Ipecac and Cayenne, each, 6 grains; pulverized Opium, 3 grains; make into twelve pills, with precipitated Extract of Peruvian Bark; or if you can not get this, use either Extract of Dogwood or Boneset, sufficient to form into pill mass. Two or three pills to be taken every two or three hours, or at the rate of one pill an hour during the well day, or intermission, till all are taken. A very certain and effectual remedy for the Ague, or Intermittent Fever.

Ague, No. 3.— Take pulverized Gum Myrrh, 20 grains; Salacine and Piperine, each, 10 grains; Leptandrin and Ipecac, each, 5 grains; make into twenty pills, with a little Extract of either Dogwood, Boneset, Gentian, or any other good Tonic Extract. To be used the same as the others.

Anti-bilious and Cathartic.— Take Aloes and Gamboge, each, 2 drams; Colocynth and Rhubarb, each, 1 dram; form pill mass with Extract of May Apple Root, or Butternut, and make into one hundred and twenty pills. Dose: as an active Cathartic, three to five pills.

Brandreth's.— Take Aloes, 1 ounce; Gamboge, ½ ounce; Colocynth, 2 drams; Castile Soap, 2 drams; Oil Peppermint, 1 dram; make into ordinary size pills, with a little Mucilage of Gum Arabic. Dose: three to six pills as a Purgative.

Excellent Cathartic.— Take Podophyllin and Leptandrin, each, 20 grains; Compound Extract of Colocynth, 60 grains; Cayenne, 10 grains; make into thirty pills, with Extract of Dandelion or Butternut. Dose: as a Purgative, two to four pills; as a Laxative, and to act on the Liver, one pill every other day.

Active Hydragogue.— Take Podophyllin, 20 grains; Gamboge, 20 grains; Colocynth, 40 grains; Oil Cloves, 10 drops; make into twenty pills, with Mucilage of Gum Arabic, or Extract of May Apple Root. Dose: as an active Hydragogue Cathartic, two to three pills.

Cathartic and Anti-bilious.—Take Podophyllin, Leptandrin, and Aloes, each, 30 grains; Cayenne, 10 grains; make into thirty pills, with Extract of Dandelion. This is a very good Cathartic pill for all ordinary purposes. Dose: two to three pills.

Cathartic and Liver.—Take Podophyllin, 30 grains; Leptandrin, Sanguinarin, Ipecac, and pure Cayenne, each, 15 grains; make into sixty pills, with a little soft Extract of Mandrake or Dandelion. This is the best pill I have ever used, as a Cathartic and Liver pill, and to act on the secretions generally. As a Purgative, the dose is from two to four pills, for a grown person; and as an Alterative and Substitute for Blue Mass, and to act on the liver, one pill once a day, or every other day.

Chamomile Pills.—Aloes purified, 12 grains; Extract of Rhubarb, 12 grains; Extract of Chamomile, 36 grains; make into twelve pills. Tonic stomachic; two for a dose.

Lee's Anti-bilious.—Take Calomel, 30 grains; Jalap, 60 grains; Gamboge, 12 grains; Tartar Emetic, 3 grains; make into twenty-four pills, with a little Mucilage or Extract of Dandelion. Dose: three to five pills, as a Purgative. You can substitute Podophyllin for the Calomel (same quantity), and have a still better pill, and perfectly safe. The dose would then be two to three pills.

Common Physic.—Take Jalap, Aloes, and Rhubarb, each, 30 grains; make into thirty pills, with Extract of Dandelion or Butternut. Dose: three to five as a Purgative. One taken every night is good for habitual Costiveness.

Anti-dyspeptic, No. 1.—Take Aloes, Rhubarb, and Castile Soap, each, 30 grains; Golden Seal, 60 grains; Cayenne, Cloves, and pulverized Lobelia Seed, each, 20 grains; make into sixty pills, with Extract of Gentian. Dose: one every night, on going to bed. Good for Dyspepsia, Sour Stomach, Costiveness, Poor Appetite, and Indigestion. Three or four will act as a mild Cathartic.

Anti-dyspeptic, No. 2.—Take Rhubarb and Castile Soap, each, 1 dram; Hydrastin, 20 grains; Ipecac, 30 grains; Oil of Cloves, 20 drops; make sixty pills with a little Extract Gentian or Boneset. If you can not get the Hydrastin, use instead a dram of powdered Golden Seal Root. Dose: one pill once or twice a day.

Anti-dyspeptic, No. 3.—Take Socotrine Aloes, 2 drams; Colocynth, Gamboge, Rhubarb, and Castile Soap, each, 1 dram; Cayenne, 30 grains; Oil Cloves, 30 drops; make into one hundred and twenty pills, with Extract of Gentian or Dandelion. Dose: for Dyspepsia, Inactive Liver, or Costiveness, one or two pills once a day; as a Cathartic, three to five pills at a dose. This is a most admirable pill; it cleanses the stomach, gives tone and energy to the digestive organs, restores the appetite, excites the liver and other secretory organs, without causing any debility.

Anti-dyspeptic, No. 4.—Take Oxyd of Bismuth, 4 drams; Rhubarb, 2 drams; Aloes and Cayenne, each, 1 dram; Ipecac, 30 grains; pulverize and mix well, and make into one hundred and twenty pills, with Mucilage of Gum Arabic. Dose: one pill before each meal. A splendid pill for Dyspepsia or Indigestion, Weak Stomach and Costiveness.

Anti-dyspeptic, No. 5.—Take Quevenne's powdered metallic Iron, 40 grains; Rhubarb, 20 grains; Extract Nux Vomica, 1 grain; triturate well in a small mortar, so as to mix them perfectly, and make into twenty pills, with Extract of Boneset, Bitter Root or Gentian. Take one pill before each meal. This is one of the best Anti-dyspeptic pills known.

Dysentery, No. 1.—Take Rhubarb, Ipecac, and Castile Soap, each 30 grains; pulverized Opium, 15 grains; make into thirty pills, with Mucilage of Gum Arabic, or any other suitable substance. Dose: one pill, every three to six hours, in Diarrhea and Dysentery. After three or four pills are taken, they should not be taken oftener than once in six hours.

Dysentery, No. 2.—Take Sulphate Morphine, 2½ grains; Gum Camphor, 15 grains; Blue Mass, 40 grains; mix well, and make into thirty pills. Dose: one pill every hour until relieved. Excellent for Diarrhea, Dysentery, Cholera Morbus, etc.

Dysentery, No. 3.—Take Leptandrin, 40 grains; Rhubarb, 20 grains; Morphine, 4 grains; mix and triturate well in a mortar, so as to mix perfectly, and make into twenty pills with Mucilage of Gum Arabic. Dose: in Dysentery and Diarrhea, one pill every

six to twelve hours; two or three pills are generally sufficient to cure any ordinary case, if given during the early stage. They may be relied on in all cases and stages of Bowel Diseases, and especially in Dysentery. A second pill may be given three hours after the first; a third six hours after the second; after that not oftener than once in twelve hours, and never more than one pill at a time.

Emmenagogue, No. 1. — Take Sulphate of Iron (Copperas) that has been exposed to the atmosphere till it has become white and dry, and in powder, 30 grains; pulverized Gum Myrrh, 60 grains; make into thirty pills, with soft White Turpentine. Dose: one pill two or three times a day. Good for Suppressed Menses or Amenorrhea.

Emmenagogue, No. 2. — Take Rhubarb, Gum Myrrh, Aloes, and Asafœtida, each, 30 grains; make into forty pills, with Mucilage Gum Arabic, and take two or three pills every night. Good to regulate the Menses, and to bring them on, when suppressed.

Emmenagogue, No. 3. — Take Red Oxyd of Iron and Gum Myrrh, each, 1 dram; Aloes, 30 grains; make into sixty pills, with Extract of Polygonum Punctatum (Smart Weed), and take one pill night and morning.

Emmenagogue, No. 4. — Take Gum Myrrh, Steel Dust, and dry Sulphate of Iron, in powder, each, 60 grains; make into sixty pills, with Extract of Smart Weed or Vervine. Dose: one pill twice a day.

Emmenagogue, No. 5. — Put 1 quart of good Vinegar into an iron vessel, and add to it a handful of Old Nails or bits of Rusty Iron, and let stand three or four days; then take out the Nails or bits of Iron, and add a teacupful of Sugar, and 1 ounce of Sulphate of Iron (Copperas); boil down and evaporate to a thick extract; then take 30 grains of Macrotin, 30 grains of powdered Aloes, and 60 grains of powdered Gum Myrrh, and sufficient of this extract to form a pill mass, and make sixty pills. Dose: one pill night and morning. This is one of the best and most effectual pills known for Suppressed and Irregular Menses. The Extract alone is good, and may be thickened and made into pills with any suitable article. The dose is from one to three pills a day.

Emmenagogue, No. 6. — Take Gum Myrrh, Aloes, and dry Sulphate of Iron, each, 30 grains; Macrotin, 20 grains; make into forty pills, with Extract of Smart Weed. Dose: one or two pills night and morning. An excellent pill for Amenorrhea or Suppressed Menses.

Emmenagogue, No. 7. — Take Sulphate of Iron, Subcarbonate of Potash, Gum Myrrh, Rhubarb, Aloes, and Macrotin, each, 30 grains; make into sixty pills, with either Extract of Smart Weed, Extract of Vervine, or Mucilage of Gum Arabic. Dose: one to three pills twice a day.

Nervous Headache. — Take Extract Hyoscyamus, 30 grains; Extract Stramonium, 10 grains; Quinine, 20 grains; Morphine, 2 grains; mix well, and make into twenty pills, adding a little powdered Liquorice Root, or any other innocent powder, if necessary, to thicken the mass. These pills are one of the best remedies known for Nervous Headache, Neuralgia in the Face or Head, Toothache, and Nervous or Neuralgic pains in any part of the system, that I have ever used. Dose: one pill for a grown person, and may be repeated every two or three hours till relief is obtained. The Extract of Belladonna may be used instead of the Stramonium, in same proportion, with equally good effect.

Sick Headache. — Take Socotrine Aloes, Gamboge, and Castile Soap, each, 1 dram, Ipecac and Scammony, each, 30 grains; Oil of Anise, 30 drops; make into sixty pills, with a little Mucilage of Gum Arabic, or Extract Dandelion. Dose: one to three pills. Useful in Sick Headache, habitual Costiveness, Dizziness, Sour Stomach, and Indigestion, and may be used whenever a good Vegetable Cathartic is needed. For an attack of Sick Headache, take three pills, and repeat in three hours, if the first does not operate. Will invariably give relief.

Rheumatic, No. 1. — Take Jalap, Colchicum Seed, and Gum Guaiac, each, 1 dram; pulverize and mix well, and make into sixty pills, with Extract of Polk Root (or berries). The dose is one or two pills, three or four times a day. Good in all cases of Chronic Rheumatism, Neuralgia, Sciatica, and the like.

Rheumatic, No. 2. — Take Macrotin and pulverized Gum Guaiac, each, 1 dram; Podo-

phyllin, 10 grains; make into sixty pills, with Extract of Poke Root. Dose: one pill two or three times a day. An excellent pill for Rheumatism and Neuralgia.

MISCELLANEOUS.

No. 1, Cough. — Take pulverized Squill, Ipecac, and Lobelia Seed, and pulverized Gum Arabic, each, 30 grains; make into forty pills, with Extract Hyoscyamus. Dose: one pill three or four times a day. Good in all kinds of Coughs, especially those connected with Bronchitis, and a tendency to Consumption.

No. 2, Asthma. — Take powdered Elecampane Root, powdered Liquorice Root, powdered Anise Seed, and Sulphur, each, 1 dram; make into ordinary sized pills, with a sufficient quantity of Tar, and take three or four pills at night, on going to bed. This is an admirable remedy for Asthma, and Shortness of Breath.

No. 3, Painful Menstruation. — Take Rhubarb, Ipecac, Macrotin, and pulverized Camphor, each, 30 grains; Podophyllin and Aloes, each, 20 grains; make into fifty pills, and take one pill night and morning, commencing a week or more previous to the period of Menstruation.

No. 4, Dysmenorrhea, or Painful Menses. — Take Macrotin, pulverized Camphor, and Cayenne, each, 30 grains; Ipecac and pulverized Opium, each, 20 grains; Podophyllin. 10 grains; make into forty pills, with Extract of Hyoscyamus. Dose: one pill twice a day, for a few days previous to Menstruation; then during the period of Menstruation, one or two pills to be taken three to six times a day, owing to the severity of the case — the patient at the same time to drink freely of a tea made of Wild Ginger, Beth Root, and Blue Cohosh or the Composition Powder, or of such herbs as Tansy and Pennyroyal, go to bed, and apply flannels dipped in Hot Water, or Hot Decoction of Bitter Herbs to the lower part of the abdomen, Hot Bricks to the feet, and get up a free Perspiration.

No. 5, Epileptic. — Take Sulphate of Zinc, 60 grains; Rhubarb and Ipecac, each, 30 grains; Cayenne, 60 grains; make into sixty pills, with Extract of Hyoscyamus. Dose: one pill night and morning for one week, then leave off for a week, then resume again, and so on every other week. An important remedy, and has cured many cases of Epileptic Fits, when taken in the early stages.

No. 6, Leucorrhea, or Whites. — Take Balsam Copaiva and Venice Turpentine, each, 3 drams; pulverized Spanish Fly, 1 dram; equal parts of Carbonate of Iron and Peruvian Bark — a sufficient quantity to form into a pill mass, make into ordinary sized pills. Dose: one or two pills twice a day. A very good pill for Leucorrhea, or the Whites.

No. 7, Hysteric. — Take Asafœtida and Carbonate of Ammonia, each, 1 dram; pulverized Opium and Macrotin, each, 30 grains; melt the first two articles over the fire, and then stir in the others; mix well, and make into sixty pills. Dose: one or two pills in cases of Hysteric Fits every two or three hours; also good in Female Nervous Attacks, and Spasmodic Affections.

No. 8, Nervous. — Take Extract of Valerian and Extract of Chamomile, each, 1 dram: Macrotin and Lupulin, each, 30 grains; make into sixty pills. Dose: one to three pills, two or three times a day. Good in Nervous Affections, Neuralgia, Rheumatism, Wakefulness and the like. Extract of Skull-cap may be used instead of either of the other Extracts, or may be added.

No. 9, Chronic Bronchitis. — Take pulverized Skunk Cabbage Root, 2 drams; pulverized Extract of Liquorice, 1 dram; Sanguinarin and Macrotin, each, 30 grains; make into large sized pills (say from eighty to one hundred), with a sufficient quantity of Tar; take one pill three to six times a day, and continue for several weeks, if necessary. One of the best remedies known for Chronic Bronchitis, and what is sometimes called "Clergyman's Tore Throat."

No. 10, Neuralgia. — Take Extract of Hyoscyamus, 1 dram; Extract of Aconite, 30 grains; Macrotin, 20 grains; Morphine, 5 grains; make into forty pills, thickening the mass, if necessary, with a little powdered Liquorice or Ginger. Dose: one pill every three hours till relief is obtained Good in Neuralgia, and all severe Nervous pains

No. 11, Liver. — Take equal parts of pulverized Mandrake, Blood Root, and Extract of Dandelion, sufficient to make a pill mass; add a few drops of Peppermint Oil, and make into ordinary sized pills. Dose: three pills at night, and again before breakfast next morning. An excellent remedy in Liver Diseases, and usually relieves pains in the side and shoulder. Serves admirably in Kidney Affections and in Jaundice. An Irritating Plaster should be applied over the part affected, when relief is certain to be experienced in a few days.

POWDERS.

IT is necessary that whatever we order to be reduced to powder should be passed through a fine sieve to separate the coarser parts and impurities, and it is desirable that most powders should not be long kept, but be recently prepared."

Anti-bilious Physic. — This is one of the best and safest Purgatives known. It is speedy in its operation, and always free from any dangerous or deleterious effects. It may be given in all cases where a Purgative is needed, and to persons of all ages. Take pulverized Jalap, 4 ounces; finely pulverized Senna, 8 ounces; pulverized Cloves, 1 ounce; mix well, and sift through a fine sieve. The materials should all be of the best quality. Dose: for a grown person, from one to two drams, or from an even to a heaping tea-spoonful, given in a little Warm Water, which may be sweetened, and if preferred, a little Brandy or Spirits added, grated Nutmeg, and the like, to render it palatable and agreeable. Children from six to twelve years of age, may take one-half as much, and under six one-third or less, according to age. When it is desired to have it operate quick, a few grains of Cayenne should be added, and a tea-spoonful or two of Cream of Tartar. In all cases of Dropsy, Inflammations, and Congestions, the Cream of Tartar should be added, as it causes copious watery discharges, thereby reducing the fluids of the system. It may also be improved in such cases, by combining with it about an equal part of the powdered Mandrake, or if the Podophyllin is preferred, two or three grains of it to the dose, for a grown person.

Neutralizing. — Take of the best pulverized Rhubarb and Saleratus, each, say 1 ounce; pulverized Peppermint Leaves, ½ ounce; let each be finely pulverized; then mix, and pass through a fine sieve. Dose: when given in substance from ten or fifteen grains to a tea-spoonful, is a dose for a grown person, repeated several times during the day. If it is given as often as once an hour, ten to twenty grains is enough at a time. It is used for Dysentery, Diarrhea, and Summer Complaint, and it is well to combine with it a little of the Diaphoretic Powder, say five or six grains to each dose. A favorite prescription in Dysentery is Neutralizing Powder, 20 grains; Diaphoretic Powder, 5 grains; Leptandrin, 1 grain — to be given once every two hours, till six or eight doses are taken. When you wish to give it in liquid form, or in syrup — and it is generally best to do so for children — take say a heaping table-spoonful of the Compound, add ½ pint of Boiling Water, simmer a few minutes, and when cool, strain, sweeten with Loaf Sugar, and give in doses of a tea-spoonful to a table-spoonful; repeated every half-hour, or hour, according to the urgency of the case. This is one of the best preparations known for Dysentery, Diarrhea, Summer Complaint, and the like. Every family should keep a supply of it on hand, especially during the summer sickly season.

Alterative, or Liver, No. 1. — Take Podophyllin and Sanguinarin, each, 10 grains; Leptandrin, 20 grains; White Sugar, 40 grains; triturate, or rub the whole together well in a small mortar and divide into twenty powders, and take one night and morning; if they operate much on the bowels, take but one a day. Uses: valuable in Liver Complaint, torpidity of the Liver, and as an Alterative, to act on the secretions of the system generally. A complete substitute for Blue Pill, and free from any danger.

Alterative, or Liver, No. 2. — Take equal parts, say of each ½ an ounce of finely pow-

dered Blue Flag Root, Blood Root, May Apple Root, Golden Seal Root, and Bitter Root; mix all together and pass through a fine sieve. Dose: as an Alterative, and to act on the Liver and Secretions, from two to five grains, twice or three times a day.

Dysentery, No. 1. — Take powdered Elm Bark, Rhubarb, and Charcoal, each, ½ ounce; add a table-spoonful of Common Salt, and the Yelk of an Egg; rub the whole together well in a mortar, till dry and reduced to a well-mixed powder. Dose: a tea-spoonful three to six times a day, according to circumstances, in a little Water or Molasses. Valuable in Dysentery or Flux, and Diarrhea; seldom fails to cure.

Dysentery, No. 2. — Take Leptandrin, 10 grains; Geraniin, 10 grains; White Sugar, 20 grains; triturate all together well in a small marble or glass mortar, and divide into twenty powders: to a child over two years of age, give one powder at a dose, three times a day; under that age, half a powder. Good in Dysentery, Flux, and ordinary Bowel Complaint. If you can not get the Geraniin, take either Gum Kino or Catechu (same quantity) instead.

Composition. — Take Bayberry, 1 pound; good Ginger, ½ pound; Cayenne and Cloves, each, 1 ounce; the whole to be finely pulverized and well mixed. Uses: to be made into a tea, and drank freely, in the proportion of a large table-spoonful to a pint of Boiling Water. It may be sweetened, and Milk added if preferred. Valuable in Colds, and where you wish to produce Perspiration. Also good before taking an Emetic, to prepare the system, and wherever a Diaphoretic or Sweating Tea is needed. It is the original Thomsonian Composition Powder.

Diaphoretic. — Take of pulverized Opium, 30 grains, or ½ dram; pulverized Gum Camphor, 2 drams; Ipecac, 1 dram; Cream of Tartar, ½ ounce; mix, and triturate well in a mortar. Dose: ten grains to half a tea-spoonful, once in three or four hours. It is valuable as a Sweating Powder; good in Fevers, Dysentery, and wherever an Anodyne and Diaphoretic are needed. When to be given as often as once in two or three hours, and to be continued a good while, it should be taken in small doses, of from five to ten grains. It acts gently on the skin, and promotes perspiration without increasing the heat of the body.

Emetic. — For all ordinary purposes, equal parts of powdered Lobelia Seed, or Herb, and Ipecac, are sufficient. In some cases, however, particularly where the lungs are affected, as in Pneumonia or Lung Fever, it is best to combine a portion of the Blood Root. Thus: Take pulverized Lobelia Seed and Ipecac, each, 2 ounces; pulverized Blood Root, 1 ounce; mix. Use: in either case, when you wish to give an Emetic, take a heaping table-spoonful of the Compound; pour on it near a pint of Hot Water (but not quite enough to scald); stir, and let steep a few minutes; then, the patient having already prepared for it by drinking a pint or more of Composition, Pennyroyal, or Boneset Tea, commence giving the Emetic Infusion in half teacupfuls, every two or three minutes, till all is taken, or he has vomited two or three times thoroughly. If one potion does not produce thorough or sufficient vomiting, prepare another, and continue in larger doses, till it does. Between each time of vomiting, a little tea should be drunk; and at the close, the patient should take some Gruel, and remain quiet for an hour or two.

Compound Spice Bitters. — Take Poplar Bark, Bayberry, Yellow Root (Golden Seal), each, 4 ounces; Colombo and Bitter Root (Indian Hemp), each, 2 ounces; Cloves and Race Ginger, each, 1 ounce; Cayenne, ½ ounce; all to be finely powdered and then mixed; to which add as much finely powdered Loaf Sugar as the whole of the others, and pass the whole through a fine sieve. Dose: a tea-spoonful in a little Water, warm or cold, or a little Wine, or anything else preferred. This is an excellent bitter for Weak Stomach, Dyspepsia, Loss of Appetite, General Debility, and wherever a Tonic and Restorative Bitter is needed. It is very convenient and pleasant to take.

Anti-septic. — Take ½ ounce each of Sulphur, Alum, and Gunpowder; pulverize and rub well together in a mortar. Dose: fifteen or twenty grains, or the third to half a tea-spoonful, every hour or two, in cases of inflammation of the Bowels, or any internal Inflammation, where there is danger of Mortification or Gangrene. Said to be a specific.

Cholera Infantum. — Take White Sugar, Gum Arabic, and Prepared Chalk, each, 4

drams; Gum Kino, 2 drams; mix altogether, and pulverize well. Dose: five to ten grains, according to age, three to six times a day. Good for Cholera Infantum and Summer Complaint.

Cough. — Take common Rosin and Loaf Sugar, each, 1 ounce; Gum Arabic and Balsam of Tolu, each, ½ ounce; reduce all to a fine powder, and triturate together in a mortar. Dose: from half to a tea-spoonful, with a sup of water, three or four times a day, and on going to bed at night. One of the best Cough remedies known. Also good for Bleeding at the Lungs.

Fever. — Take finely pulverized Gum Myrrh, Blood Root, and Lobelia Seed, or Ipecac, each, ½ ounce; Gum Camphor and Niter, each, 2 drams; pulverize, mix, and rub well together in a mortar, and bottle for use. Dose: three to five grains, every hour or two during Fever. Good to allay the excitement, act on the skin, and promote perspiration; also, a good Expectorant Powder in Coughs, Colds, Pneumonia, and Oppressed Breathing.

Asthma. — Take Sulphur, 1½ ounces; Cream of Tartar and pulverized Senna, each, 1 ounce; Anise Seed, ½ ounce, pulverized; mix well together. Dose: a tea-spoonful in a table-spoonful or two of Molasses, on going to bed, and, if required, occasionally through the day. Said to act with the happiest effects.

LINIMENTS.

LINIMENTS are fluid external applications generally applied with the hand, using continuous moderate friction.

Compound Soap. — Take Castile Soap, Oil Sassafras, Gum Camphor, Spirits of Hartshorn, and Spirits of Turpentine, each, 1 ounce; Alcohol, 2 ounces; mix. A good Liniment for Swelled Glands, Inflamed Tonsils, Sore Throat, Quinsy, Mumps, and Inflamed Female Breasts.

Rheumatic. — Take Alcohol, 4 ounces; Gum Camphor, Oil Hemlock, Oil Cedar, and Spirits Turpentine, each, ½ ounce; mix. Use freely in Rheumatism, Pains, Swollen Joints, Sprains, etc.

Compound Myrrh. — Take pulverized Gum Myrrh, 2 ounces; Oil of Hemlock, 1 ounce; Cayenne and Gum Camphor, and Oil Origanum, each, ½ an ounce; Alcohol, 1 pint; mix. A valuable stimulating Liniment; good in Stiff Joints, Contracted Tendons, and in all cases where a stimulating Liniment is indicated. May be used internally, in tea-spoonful doses, for Pains, Colic, Diarrhea, and the like.

Diuretic. — Take Oil Juniper, Oil Horsemint, and Oil Spearmint, each, 1 ounce; Alcohol, 3 ounces; mix. Good to rub the Back, and over the region of the Kidneys, when those organs are inflamed or inactive.

Rheumatism of the Joint. — Take Oil of Linseed, Oil of Cedar, and Oil of Amber, each, 1 ounce; Gum Camphor, ½ ounce, dissolved in ½ ounce of Sweet Oil, by rubbing in a mortar, first adding to the Camphor a few drops of Alcohol, so as to powder it; Spirits of Turpentine and Laudanum, each, ½ ounce; mix, shake well, apply, and rub in well. One of the best Rheumatic Liniments known.

Eclectic. — Take Aqua Ammonia, Spirits of Turpentine, Sweet Oil, Tincture of Camphor, and Laudanum, each, equal parts. A valuable Liniment in all kinds of Acute Pains.

California. — Take Opodeldoc, Spirits of Turpentine, Oil Origanum, and Rock Oil, each, 2 ounces; Gum Camphor and Red Pepper, each, ½ ounce; Aqua Ammonia, 1 ounce; Alcohol, 1 quart. Good in all Acute Pains, Rheumatism, Sprains, and Swellings; good for man or beast.

Discutient. — Take Aqua Ammonia, Pyroligneous Acid, Oil Origanum, Spirits Turpen-

tine and Sweet Oil, each, 1 ounce. Apply to all kinds of Hard and Indolent Tumors, Gatherings, and Hard Swellings, to discuss or scatter them; also to Callous Enlargements of the Bones. Use freely as a Liniment.

Nerve. — Take Oil of Sassafras, Tincture of Cayenne, Spirits of Hartshorn, Oil of Pennyroyal, Oil of Hemlock and Laudanum, each, ½ ounce; mix, shake well, and bottle for use. Useful in all Acute Pains, Neuralgia, Headache, Spasms, Toothache, Gout, Rheumatism, Sore Throat, Inflamed Breasts of Females, and all Nervous Pains.

Arnica. — Take Tincture of Arnica, 1 dram; Alcohol, 4 ounces; mix, and shake well in the bottle. Unequaled for Pains in the Feet and Limbs, from walking; for all fresh and recent Sprains, Bruises, and Contused Wounds; and for Rheumatism of the Joints, and Gouty Pains.

OINTMENTS,*

ARE unctuous preparations having the consistence of butter; they are mostly intended as external and local applications. They become rancid if kept too long, or in a warm place, but will keep better by the addition of a little Benzoic Acid or of Gum Benzoin.

Tetter. — Take fresh Butter, 4 ounces; Venice Turpentine, 1 ounce; Red Precipitate, 1 ounce; melt the Butter and Turpentine together; while warm stir in the Precipitate, and mix well. Rub on a little once or twice a day, for Tetter, Ringworm, Itch, and all Eruptions of the Skin.

Indian Pile. — Take, say a teacupful of Hog's Lard (more or less), put in a flat tin or pewter dish, and take two bars of Lead, flattened a little, and rub the Lard with the flat ends, and between them, till it becomes black, or of a dark lead color; then burn equal parts of Cavendish Tobacco and old Shoe-leather, in an iron vessel, till charred; powder these and mix into the Lard till it becomes a thick Ointment. Use once or twice a day as an Ointment for the Piles. A never-failing cure.

Pile. — Take a handful, each, of Stramonium (Jimson) and Catnip Leaves, bruised; 2 or 3 Onions, and about 2 ounces of Tobacco, cut or broken to pieces; cover the whole with Whisky, and let stand three days; then add ½ pint of Lard, fried out of old Rusty Bacon, and simmer slowly over the fire till the Spirits are evaporated; then strain and press out. This is an excellent Ointment for all cases of Piles; also good as a Discutient for Hard Swellings, Gatherings, and Tumors.

Stramonium. — Take any quantity of Stramonium or Jimson Leaves, bruise, and simmer slowly in Lard for two or three hours, adding a small portion of Tallow, or Beeswax (if for summer use) to harden it; strain and press out. Good as a Discutient Ointment, for Swellings, Tumors, and the like. Also a good Pile Ointment. By adding to this Ointment, when cold, a quantity of finely powdered Tobacco or Scotch Snuff, and mixing well, you have still a better Pile Ointment. If the Piles are of the bleeding kind, or there is any protrusion or falling of the bowel, to an ounce of this Ointment add a dram or two of Tannin, and mix well to make it astringent.

Buckeye Pile. — Take half a dozen ripe Buckeyes, remove the shells, bruise, and stew in ½ pint of Lard, slowly, for an hour or two. This is a great remedy for Piles.

Discutient. — Take Bittersweet Bark (of root), Poke Root, Yellow Dock Root, and Stramonium Leaves, each, a handful, bruised; cover with Spirits or Whisky, and let stand three days; then add a pint of Lard, and simmer for an hour or two; then strain and press out; add 1 ounce of Venice Turpentine, and simmer again to evaporate all the Spirits. A good Ointment to discuss or scatter Tumors, Gatherings, and Swellings.

Chalk, No. 1.—Mix as much prepared Chalk, finely powdered as you can, into Lard, so as to form a thick Ointment. Use as an application to Burns and Scalds. It is said to be an excellent application.

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* See pages 571 and 291, *at bottom.*

Chalk, No. 2.—Take fresh Lard, any quantity, and work into it a quantity of powdered Soot—about 1 table-spoonful of Soot to 1 ounce of Lard—and apply. This is one of the best applications for Burns and Scalds that can be made.

Nerve.—Take Bittersweet Bark (of root), 2 ounces; Wormwood Herb and Chamomile Flowers, each, 1 ounce; digest in Spirits three days; then add ½ pound of Lard, and about two ounces of Mutton Tallow, and simmer slowly for an hour or two, then strain and press out, and if the Spirits are not all evaporated, simmer again. When nearly cold, add 1 ounce powdered Gum Camphor. This is an excellent Ointment for painful Tumors, Gatherings, Bruises, and especially good for Inflamed Female Breast, Sore Nipples, and to Dry Up the Milk.

Scald-head, No. 1.—Take 2 drams of Sulphur, 1 dram of Sulphate of Zinc, and a teaspoonful or two of Chimney Soot from burnt wood, and mix well with about 1 ounce of hog's Lard. Cut the child's hair close; wash the head well with Castile Soap and Warm Water; then rub on a little of this Ointment, once or twice a day—always cleansing the head well first with the Soap and Water.

Scald-head, No. 2.—Take a handful of young green Rye, any time before it heads out, and simmer in Sweet Cream; the head to be anointed with this two or three times a day, cleansing the head always first, as above directed. Keep the head covered with a cap, when using the Ointment. A little of the Tetter Ointment may also be applied occasionally.

Iodine.—Take Iodine, 20 grains; Iodide of Potassa, 40 grains; Simple Cerate, or Lard, 1 ounce; rub well together in a mortar till dissolved and thoroughly mixed. Used for Goitre or Big Neck, Scrofulous and Glandular Swellings, and Tumors, and for Mercurial Sore Throat, applied externally twice a day.

SALVES.

For Burns and Scalds, No. 1.—Take Sweet Oil, 4 ounces; Burgundy Pitch, 2 ounces, and Beeswax, 1 ounce; simmer in an earthen vessel over the fire till melted and well mixed. When cool, put in a jar and keep from the air. To be used by spreading thinly on linen or fine muslin, and applied to the Burn or Scald; open the Burn with a needle and let out the water, if any, and continue the Ointment till healed.

For Burns and Scalds, No. 2.—Wheat Flour is an excellent remedy for Burns. It is to be sprinkled on, so as to completely cover the wound or burnt part; it protects the part from the atmosphere, exposure to which is one great cause of the pain. It also draws out the fire. The wound may also be bathed at the same time, just previous to applying the Flour, with Lime Water and Sweet Oil, equal parts, by means of a feather.

For Burns and Scalds, No. 3.—The application of pure or strained Honey is very good; it will generally relieve the pain in a very short time, and induces the wound to heal very rapidly.

For Burns and Scalds, No. 4.—Common Sugar-house Molasses is very good, if Honey can not be had. Raw Potatoes scraped, and mixed with a little Sweet Oil, or Linseed Oil, and a few drops of Spirits of Turpentine, is also a good application. If the Burn is extensive and severe, the patient should take an active Hydragogue Cathartic, and keep the bowels open. The Anti-bilious Physic, or any active Cathartic Pills, with a teaspoonful of Cream of Tartar, will do; or a dose of Salts.

Common Healing.—Take Rosin and Beeswax, each, 2 ounces; Sweet Oil, 8 ounces; melt together, stirring till cold. This is a good Healing Salve for all ordinary or common Sores.

Black, or All-healing.—To the above add slowly, while near the boiling point, 4 ounces of Red Lead, stirring, and when nearly cold, two drams of pulverized Camphor, stirring well. Valuable wherever a Healing Salve is required.

Bayberry. — Take Bayberry Tallow, 2 ounces; White Turpentine and Sweet Oil, each, 1 ounce; melt together, stirring well. Useful to apply to Scrofulous Ulcers.

Green. — Take Rosin and Beeswax, each, 1 ounce; Mutton Tallow (or hog's Lard), about 4 ounces; melt altogether, and stir in 1 dram of Pulverized Verdigris, and mix well. Useful for Old Sores, Ulcers, Cancers, Scrofulous Sores, Cuts, and Wounds.

MIXTURES,

ARE compound liquid medicines, generally prepared only as required. Heavy powders and incompatible solutions are to be avoided in mixtures.

Ague, No. 1. — Take Quinine, 20 grains; Water, 1 ounce; Sulphuric Acid, 20 drops; mix in a vial. Dose: a tea-spoonful every hour, or every two hours, during the well day, till all is taken. A certain cure for the Ague, or Chills and Fever.

Ague, No. 2. — Take Quinine, 20 grains; pulverized Alum, 2 drams; Water, 1 ounce, Sulphuric Acid, 20 drops; good Brandy, 3 ounces. First, dissolve the Quinine in the ounce of Water and Acid, then add the Alum and Brandy. Dose: a table-spoonful, for a grown person, every one, two, or three hours, during intermission. This is a never-failing cure for the Chills and Intermittent Fever.

Ague No. 3. — Take Alcohol, ½ pint; Socotrine Aloes and best Turkey Rhubarb (the root), each, ½ ounce; let stand and digest in the Alcohol five or six days; then strain through a flannel cloth, and add 1 dram Oil of Wintergreen, and shake well; then dissolve 2 drams of Quinine in 2 ounces of Water and 30 drops of Sulphuric Acid; when thoroughly dissolved, add to the Alcohol, and then add ½ pint of good Molasses or Syrup, and you have as good a Cholagogue, or Ague remedy, as was ever made. Dose: a tea-spoonful from three to six times a day, to be taken during the well days.

Ague, No. 4. — Take Peruvian Bark, pulverized, 1 ounce; pulverized Nutmeg, Cloves, and Jamaica Ginger, each, 2 drams; Salts of Tartar, 1 dram; add all to 1 pint of any kind of Sour Wine, or Hard Cider. Dose: about half a wine-glass three to six times a day, shaking well before using each time. A very good remedy.

Cough, No. 1. — Take Hoarhound Herb, Elecampane Root, Spikenard Root, Ginseng Root, Black Cohosh and Skunk Cabbage Roots, each, say a good sized handful, bruise, and cover with Spirits or Whisky, and let stand ten days; then put all in a suitable vessel, add about 4 quarts of Water, and simmer slowly over a fire (but don't boil) for twelve hours, or till reduced to about 3 pints; then strain, and add 1 pint of Strained Honey, ½ a pint, each, of Number Six, Tincture Lobelia and Tincture Blood Root (the Vinegar or Acetic Tincture of Blood Root is the best), and 4 ounces of strong Essence of Anise, and you will have one of the best Cough Syrups known. Dose: a table-spoonful three to six times a day, according to circumstances. Good in all kinds of Coughs and Incipient Consumption.

Cough, No. 2. — Take Mucilage of Gum Arabic, Oil of Sweet Almonds, Syrup of Balsam Tolu, and Wine of Ipecac, each, 1 ounce; Tincture of Opium, or Laudanum, ½ ounce. Dose: for a grown person, one to two tea-spoonfuls, as often as required.

Cough, No. 3. — Take Extract of Liquorice, 1 ounce, powdered; Nitrate of Potash (Saltpeter), and Muriate of Ammonia, each, 2 drams; dissolve in half a pint of Boiling Water, and when cool add Wine of Ipecac, Syrup of Balsam Tolu, and Essence of Anise, each, 1 ounce. Dose: from a tea spoonful to a table-spoonful, several times a day. An excellent remedy for Bronchitis, Colds, and Catarrhal Coughs.

Cough, No. 4. — Take 1 pint of Vinegar, 1 teacupful, each, of Honey and Molasses, and a small handful of Hoarhound Leaves, bruised; simmer over the fire fifteen or twenty minutes, then strain, squeeze out, and add 1 ounce, each, of Wine of Ipecac and Tincture of Lobelia. Dose: a tea-spoonful or two as often as required.

Cough, No. 5. — Take Syrup of Squill, Syrup of Balsam Tolu, Antimonial Wine, and Paregoric, each, 1 ounce. Dose: a tea-spoonful every hour or two, while the Cough lasts.

Cough, No. 6. — Take Tincture of Black Cohosh, Tincture of Lobelia, Tincture of Balsam Tolu, and Acetic (or Vinegar) Tincture of Blood Root, each, 2 ounces; No. 6, ½ ounce. Dose: a tea-spoonful three to six times a day. This is one of the best Cough remedies I have ever used. If desired, an ounce or two of Simple Syrup may be added to the above quantity, or the Syrup of Tolu may be used instead of the Tincture. Half an ounce of Laudanum may also be added, if desired.

Cough, No. 7. — Take Sweet Oil, Acetic Acid and Honey, each, 1 ounce; Laudanum and Wine of Ipecac, each, ½ ounce. Dose: a tea-spoonful every two or three hours. Very good for Coughs and Colds.

Dysentery, No. 1. — Take Compound Tincture of Catechu and Paregoric, each, 1 ounce. Dose: a tea-spoonful every hour or two. A powerful Astringent, and good in Diarrhea and Dysentery, when all else fail.

Dysentery, No. 2. — Take Tincture of Rhubarb, 1 ounce; Laudanum, ½ ounce; Sugar of Lead, pulverized, 30 grains. Dose: for a grown person, one tea-spoonful every two to four hours, in Dysentery, Diarrhea, and Bleeding from the Bowels or Womb.

Dysentery, No. 3. — Take dry Opium, Gum Kino, and best Turkey Rhubarb, each, 1 ounce; Cardamom Seeds, Cloves and Cinnamon Bark, each, ½ ounce — all coarsely powdered; Brandy or Alcohol, 1 pint; let stand and digest two weeks, shaking every day; then strain and squeeze out. Dose: the same as that of Laudanum, from twenty to sixty drops for adults, and from one to ten for children; to be repeated every three to six hours, according to the urgency of the case. It is a valuable remedy for Dysentery, Diarrhea, and Bowel Complaint, and will seldom fail to cure.

Dysentery, No. 4.—Take ½ ounce of bruised Turkey Rhubarb, and ½ ounce Saleratus, steep or simmer slowly for fifteen minutes in a pint of Water, strain, and add a teacupful of White Sugar, and heat again to dissolve; then add 60 drops Oil of Peppermint, dissolved in 1 ounce of Alcohol. Dose: from a tea-spoonful to a table-spoonful every hour, till relieved. An excellent remedy for Diarrhea, Dysentery, and especially adapted to the Bowel Complaints of young children.

Dysentery, No. 5. — Take Cloves, Allspice, and Cinnamon Bark, each, ½ ounce; White Oak Bark, 1 ounce; bruise all, and boil in 1 quart of Water down to ½ pint; strain; add 4 ounces White Sugar, dissolve by melting; then add half as much good Brandy as there is of the liquid. Dose: one, two or three tea-spoonfuls, three to six times a day, or oftener, according to age and urgency of symptoms. An infallible cure for Cholera Infantum, or Summer Complaint.

Dysentery, No. 6. — Take Turkey Rhubarb, Saleratus, Peppermint Herb, and Wild Cherry Bark, each, 1 ounce; Golden Seal Root and Cinnamon Bark, each, ½ ounce; bruise all, and add a pint and a half of Boiling Water, and simmer slowly for an hour; then strain and press out; add and dissolve with heat ½ pound of Loaf Sugar, and when cold add half as much good Brandy as there is of the Syrup. This is one of the best remedies known for Diarrhea, Dysentery, Summer Complaint, and Cholera Morbus. Dose: from a tea-spoonful to one or two table-spoonfuls, according to age, and may be repeated every half hour, to once in two or three hours, according to symptoms.

Dysentery, No. 7. — Take a pound of Blackberry Root, well cleansed and cut into small pieces; 1 ounce, each, of Cloves, Cinnamon Bark, and Allspice, bruised; boil all, slowly in about 6 quarts of Water, down to 1 quart, strain and press out, and add 1 pound of White Sugar, and when cold, 1 pint of Best French Brandy. A valuable remedy for Diarrhea, especially Chronic Diarrhea and Summer Complaint. Dose: from a tea-spoonful to two table-spoonfuls, according to age, three to six times a day.

Dysentery, No. 8. — Take Turkey Rhubarb, bruised, 1 ounce; Wild Cherry-tree Bark, 2 ounces; Supercarbonate of Soda and Cinnamon Bark, each, 1 ounce; White Sugar, ½ pound; simmer the whole slowly for an hour in a pint and a half of Boiling Water, then strain and squeeze out. Dose: a table-spoonful, more or less, according to age, every

half hour to every hour or two, according to symptoms. Said to never fail in curing Dysentery or Flux. Good in all Bowel Complaints.

Dysentery, No. 9. — Take Wild Cherry-tree Bark and Poplar Bark (root), each, a handful; simmer slowly for an hour or two in a quart of Rain Water, then strain; add Loaf Sugar, 2 pounds; Peach Kernels, finely powdered, 4 ounces, and good Brandy, half as much as there is of the decoction. Bring to the boiling point and stir, to dissolve the Sugar. Dose: half a wine-glass three to six times a day; less for children. Good in Diarrhea, Dysentery, and all Bowel Complaints. An admirable Tonic Astringent.

Dysentery, No. 10. — The following recipe has been used in many families with great success for several years. It is said to be almost a specific for the Summer Complaint. In all kinds of Bowel Complaints usual in warm weather, it has proved to be useful, and every family should supply themselves with it: To 2 quarts of ripe Blackberries add the following ingredients: 1 pound Loaf Sugar; ½ ounce, each, of Nutmegs, Cinnamon, Cloves, and Allspice. Boil all together for a short time, and when cold, strain and add a pint of fourth-proof Brandy. From a tea-spoonful to a wine-glassful, according to the age of the patient, is to be given at proper intervals, until relieved.

Emmenagogue, No. 1. — Take Gum Guaiac and Gum Myrrh, each, 2 ounces; pulverized Allspice, 1 ounce; Aloes and Saleratus, each, ½ ounce; best Brandy or Gin, 1 pint; digest two weeks, and then filter or strain. Dose: a tea-spoonful three times a day. Good in Suppressed Menses, and in Chlorosis or Green Sickness.

Emmenagogue, No. 2. — Take a handful, each, of Smart Weed, Tansy and Pennyroyal; about 2 ounces of fresh Horseradish Root, bruised, and 1 ounce of Madder; put all in a bottle; cover with good Whisky or Proof Spirits, and let stand and digest two weeks. Dose: a table-spoonful three times a day.

Emmenagogue, No. 3. — Take Oil of Savin, Oil of Pennyroyal, Oil of Tansy, Oil of Rosemary, and Tincture of Cantharides, each, 2 drams. Dose: half a tea-spoonful three times a day, in a little Wine, Spirits, or Sweetened Water, shaking the vial well before using. This is a very powerful and certain Emmenagogue, and must not be taken by pregnant females, as it will produce Abortion. Its use should be commenced about a week before the expected time for the Menses, and the dose should be but ten drops at first, gradually increased a drop or two each day, up to thirty drops, or even more, if necessary.

Emmenagogue, No. 4. — Take Tincture of Savin and Tincture of Black Hellebore, each, 1 ounce; Tincture of Castor, ½ ounce; mix. Dose: a tea-spoonful three times a day. A very certain remedy in Obstructed or Suppressed Menses.

MISCELLANEOUS.

No. 1, Syrup for Gravel. — Take a handful of the bark of the root of the Sweet-apple Tree, and make a quart of strong decoction by boiling in Water; add to it ½ pound of White Sugar and 1 pint of good Holland Gin. Dose: a wine-glassful three times a day. A sovereign remedy for Gravel.

No. 2, Sudorific. — Take Gum Camphor, Saffron, Ipecac, and Virginia Snake Root, each, 1 ounce; Opium, ½ ounce; add all to 1 quart of good fourth-proof Brandy, or Alcohol, and digest two weeks; then filter or strain. Dose: a tea-spoonful every one or two hours, in a little warm Herb Tea, to produce sweating. It is one of the best and most useful medicines known to produce perspiration or sweating. Useful in Fevers, Inflammation, Colds, and wherever free perspiration is desired.

No. 3, Anti-Spasmodic. — Take Lobelia Seed, pulverized, 4 ounces; Lady Slipper Root, powdered, 4 ounces; Cayenne, 2 ounces; Alcohol (diluted with half as much Water as Alcohol), 1 quart; digest two weeks, shaking frequently, then strain or filter, Dose: from a tea-spoonful to a table-spoonful, according to urgency of symptoms. Valuable in Spasms, Convulsions, Fits, Lockjaw, Suspended Animation from Drowning, Lightning, Falls, or any other cause, and in all violent attacks of disease. The doses should be repeated every five, ten, or twenty minutes.

No. 4, Expectorant. — Take pulverized Lobelia (seed or herb), powdered Blood and Rattle Root (Black Cohosh), each, 3 ounces; Alcohol and good Vinegar, each, 1 pint; digest for ten days or two weeks, then strain or filter, and add 4 ounces, each, of Wine of Ipecac and Tincture of Balsam of Tolu, and 1 ounce strong Essence of Anise. A portion of Honey may be added, if preferred. Dose: one to two tea-spoonfuls, repeated as often as circumstances require. Highly useful as an Expectorant in Coughs, Colds, and all affections of the Lungs. A similar preparation may be made by combining equal parts of Tinctures Lobelia, Blood Root, Rattle Root, Balsam Tolu, and Wine or Syrup of Ipecac.

No. 5, Compound Tincture of Myrrh, or Improved No. 6. — Take best Gum Myrrh, 8 ounces; Cayenne, Balsam of Fir, and Nutmegs, each, 1 ounce; good Brandy, 2 quarts; bruise the solid articles, and let stand two weeks to digest, shaking once or twice every day; then strain or filter. Or it may be made for immediate use by putting the whole in a stone jug, and placing this in a warm sand bath, or in a vessel of boiling water, for twenty-four hours, shaking frequently. Dose: a tea-spoonful is an ordinary dose for a grown person. Good in Colic, Pains in the Stomach and Bowels, Diarrhea, Headache, Sick Stomach, and wherever a powerful stimulant is indicated. It is also valuable as a wash, or external application, for Sprains, Bruises, foul Ulcers, and Old Sores. It is a preparation that no family should be without.

No. 6, Elixir of Life. — Take Rhubarb and Ginger, each, 1 ounce; Aloes, ½ ounce; Gum Myrrh, 2 drams; Cayenne, 1 dram; Saffron, 1 dram; Cloves, 2 drams; Sassafras Bark (of root), ½ ounce; Golden Seal Root, ½ ounce; Brandy or Good Whisky, 1 quart. Let stand and digest two weeks; then strain and bottle for use. Dose: a table-spoonful half an hour before eating. Good for Dyspepsia, Loss of Appetite, and all derangements of the Stomach.

No. 7, Gargle for Sore Mouth and Throat. — Take a small handful, each, of Sage and Privet Leaves; about half as much Golden Seal Root and Bark of Sumach Root; boil in three or four pints of Water down to 1 pint, strain, and add an even table-spoonful each of powdered Alum and Borax, and about a half a tea-cupful of Honey. This is an excellent wash and gargle for all kinds of Sore Mouth, Ulcerated Sore Throat, and Salivation from Mercury. For Quinsy, and Sore Throat from taking cold, add a little Cayenne and Vinegar, and gargle frequently, occasionally swallowing a spoonful.

No. 8, Gargle for Sore Mouth and Throat. — Take of Borax, powdered, 1 dram; Tincture of Myrrh, ½ ounce; Honey, 1 ounce; Rose Water, 4 ounces; mix. To be used frequently as a Mouth Wash and Gargle for Sore Throat.

No. 9, Gargle in Scarlet Fever. — Take Cayenne, 1 tea-spoonful; common Salt, 2 tea-spoonfuls; 1 teacupful of Vinegar and Water, bring to the boiling point, then let stand and cool, and then strain. Use as a Gargle, cold, in Sore Throat and in Scarlet Fever. An excellent remedy.

No. 10, Gargle for Quinsy. — Take Sage and Hyssop, each, a small handful; simmer a few minutes in 1 pint of Water to make a strong tea; add 2 tea-spoonfuls of powdered Borax; strain and use freely as a Gargle, warm or cold.

No. 11, Gargle for Falling of the Palate. — In cases of Prolapsus or Elongation of the Uvula, called generally *Falling of the Palate*, use freely a strong decoction of White Oak Bark, as a Gargle. A little Alum may be dissolved in it, to make it still more astringent.

No. 12, Uterine Astringent. — Take Water, 2 ounces; Laudanum, 1 ounce; Elixir Vitriol, 1 dram, and Blue Vitriol, pulverized, 4 grains; mix. Dose: a tea-spoonful, repeated every hour or two, according to circumstances. Good in Menorrhagia, or Bleeding from the Womb, and Profuse Menstruation.

No. 13, Compound Infusion of Senna. — Take Senna and Manna, each, 1 ounce; Fennel Seeds, ½ ounce, bruised; infuse in a pint of Boiling Water, keeping it hot, for an hour or two; then strain and add 1 ounce of Cream of Tartar. Dose: one to three table-spoonfuls every hour or two, till it operates. An excellent, sure, and safe purgative; good in all kinds of Inflammatory Fevers, and for Pregnant Females.

No 14, Parturient Balm.—Take Blue Cohosh Root, 4 ounces; Lady Slipper Root and

Spikenard Root, each, 1 ounce; Sassafras Bark (of root) and Cloves, each, ½ ounce; bruise all, and simmer slowly two hours, in two quarts of Boiling Water; strain, and add 1 pound of White Sugar. Dose: a wine-glassful twice a day, for two weeks or a month, previous to expected Confinement, for the purpose of rendering Parturition or Childbirth more easy. An important medicine.

No. 15, Anodyne Infusion.—Take Lady Slipper Root, pulverized, 2 ounces; Ginseng and Anise Seed, powdered, each, 1 ounce; 1 Nutmeg, powdered; infuse in 1 pint of Boiling Water for half an hour, and sweeten. A good Anodyne in Fevers, Croup, Nervous Irritability, Hysterics, and the like. Dose: a wine-glassful, occasionally.

No. 16, Alterative Syrup.—Take Foreign Sarsaparilla, Yellow Parilla, Dandelion and Burdock Roots, each, 1 pound; Guaiacum Shavings, Poke Root, Blue Flag Root, Elder Blossoms, and Bark of Sassafras Root, each, ½ pound; cut the roots into small bits, and boil together in 4 gallons of Water down to 4 quarts; let stand to cool and settle; strain and press out; then add 8 pounds of White Sugar; heat and stir to melt the Sugar, and when cool, bottle for use. Dose: half a wine-glassful three times a day. An excellent Alterative in all Constitutional Diseases and Impurities of the Blood, and especially in Skin Diseases, Secondary Syphilis, Liver Complaint, Rheumatism, and Scrofula. To make it still better, add to each pint 1 dram of Iodide of Potassa.

No. 17, Scrofulous Syrup. — Take Yellow Dock Root, 2 pounds; Stillingia Root and Bark of Bittersweet Root, each, 1 pound; boil slowly in 3 or 4 gallons of Water down to 3 quarts; strain, and add 6 pounds of White Sugar. Dose: half a wine-glass three times a day. A valuable remedy for Scrofula or King's Evil, and all Scrofulous Skin Diseases, as Tetter, Herpes, Leprosy, and the like; also a valuable Alterative in all Constitutional Diseases.

No. 18, Remedy for Leucorrhea, or Whites. — Take Beth Root, 2 ounces; Star Root and Peruvian Bark, each, 1 ounce, all finely pulverized; cover with 1 pint of Boiling Water; when cold, put all in a bottle, and add a pint of good Port Wine. Dose: a wine-glassful three times a day. A superior Female Tonic and Astringent for the Whites.

No. 19, Pollyrium, or Eye Water. — Take Sugar of Lead and Sulphate of Zinc, each, 1 dram; common Salt and Loaf Sugar, each, 2 drams; Rose Water (or Rain Water), 4 ounces; let stand and digest four days, then carefully pour off clear. Bathe the eyes and inside of the eyelids with this two or three times a day. Good in all cases of sore or Inflamed Eyes.

No. 20, Pollyrium, or Eye Water. — Take Wine of Opium and Rose Water, each, 1 ounce; Sulphate of Zinc, 20 grains; let stand four days, then pour off carefully, and apply a little as an Eye-wash two or three times a day.

No. 21, Pollyrium, or Eye Water. — Take ½ ounce, each, of Green Tea and Lobelia Herb, and tincture a few days in 4 ounces of Alcohol and Water, equal parts; an invaluable Eye Water for Weak Eyes, and all kinds of Sore and Inflamed Eyes. Use two or three times a day.

No. 22, Tincture for Rheumatism. — Take pulverized Gum Guaiac and Allspice, each, 4 ounces; Blood Root, pulverized, 2 ounces; Pearlash, 1 ounce; fourth-proof Brandy, 1 quart; let stand and digest three or four days, shaking it two or three times a day. Dose: a tea-spoonful three or four times a day, in a little Milk, Syrup, or Wine. An almost infallible remedy for Rheumatism.

No. 23, A Delicious and Wholesome Beverage. — Take of the best Jamaica Ginger Root, 2 ounces; Sassafras Bark (of Root) and Wild Cherry-tree Bark, each, 2 ounces; Burdock Root, 4 ounces (all to be bruised); Cream of Tartar, 2 ounces; Water, 2 gallons; boil about ten minutes, then strain; add about 1½ pounds of White Sugar, and the rind of a Lemon cut in bits; heat and stir till the Sugar is dissolved; then pour into a stone or earthen jar, adding 3 drams of Tartaric Acid at the same time; when about lukewarm, add ½ a teacupful of Hop Yeast, stirring all well together. Then bottle for use, tying down the corks well; or you may leave it in the jar. In a few days it will be in high perfection, and an excellent medicated Table Beer.

No 24, Decoction of Tar — Jew's Beer.— Take of Water, 3 quarts; Wheat Bran, 1 quart;

Tar, 1 pint; Honey, ½ pint; simmer together three hours, and when cool add a pint of Brewer's Yeast. Let stand thirty-six hours, and then bottle it. Dose: from one to two table-spoonfuls three or four times a day. Useful in Consumption and other Lung Affections, attended with Cough and copious raising.

No. 25, For the Croup. — Cut Onions into thin slices; between and over them put brown Sugar, and let it dissolve. A tea-spoonful of the Syrup will produce instant relief.

No. 26, Living Drops. — Take Oil of Cajeput, Oil of Cloves, and Oil of Anise, each, ½ ounce; Alcohol, 2 ounces; mix and shake well. Dose; from ten drops to half a tea-spoonful. Good in Bilious, Cramp, and Flatulent Colic, Pain in the Stomach or Bowels, Cramps, Spasms, and the like.

No. 27, Hooping-Cough.—Take Honey, Sweet Oil, and Vinegar, equal parts of each, simmer together over the fire a few minutes, then bottle for use. Dose: a tea-spoonful as often as necessary. Very good to allay Coughing.

No. 28, Hooping-Cough. — Take of Carbonate of Potash, 1 dram; pulverized Cochineal, 15 grains; Loaf Sugar, ½ ounce; Water, 4 ounces; mix. Dose for children: a tea-spoonful every three or four hours.

No. 28½, Chavasse's Remedy for Hooping-Cough. — Sulphate of Copper, ½ grain, Syrup of Poppies ½ ounce, Aniseed Water, 1½ ounces. Mix. Dose: one to two tea-spoonfuls.

No. 29, Hooping-Cough. — Take Wild Ginger Root, bruised, 2 ounces; ½ pint, each, of Alcohol and Water; simmer them together over the fire slowly for fifteen minutes; then add, while hot, 30 grains powdered Cochineal, ½ pound of White Sugar, and 3 drams of Carbonate of Potash; let stand till cool, then strain and press out, and add 2 ounces of Wine of Ipecac. Dose: from one to two tea-spoonfuls, according to age, and repeated according to circumstances. This is the best remedy for Hooping-cough I ever tried.

No. 30, Worm Mixture — Vermifuge. — Take Oil of Wormseed, 2 drams; Oil of Tansy and Spirits of Turpentine, each, 1 dram; Sweet Oil and Castor Oil, each, 2 ounces; mix and shake well before using each time. Dose: a tea-spoonful or two, according to age, three times a day. Equal to the best Vermifuge known.

No. 31, Vermifuge Candy. — Make a strong decoction of Sage, 2 parts, and Wormseed, 1 part; strain, and add Sugar enough to make into Candy; boil down until it will grain, then make into Candy, and let the child eat of it. Said to be infallible.

No. 32, Worm Elixir. — Take Gum Myrrh and Aloes, each, 1 ounce; Saffron, Sage Leaves, and Tansy Leaves, each, ½ ounce; tincture in a pint of Brandy two weeks, and give to children a tea-spoonful once a week to once a month, as a preventive. They will never be troubled with Worms as long as you do this.

No. 33, Golden Tincture. — Take Alcohol, 6 ounces; Sulphuric Ether, 2 ounces; Oil of Lemon and Oil of Anise, each, 1 dram; Laudanum, ½ ounce. Dose: from one to three or four tea-spoonfuls. An excellent Anti-spasmodic, and good in Twitching of the Muscles and Tendons.

No. 34, Red Drops. — Take Tincture of Guaiac, ½ ounce, Oil Cubebs, 2 drams; Balsam Copaiva, 1 ounce; Laudanum, 2 drams; Compound Spirits of Lavender, ½ ounce; mix. Dose: a tea-spoonful three or four times a day. A specific for Gleet, Gonorrhea, and Leucorrhea, and good for Affections of the Kidneys.

No. 35, Chalk Mixture.—Take Prepared Chalk, 2 ounces; White Sugar and pulverized Gum Arabic, each, 1 ounce; Hot Water, 8 ounces; mix, and stir in a marble mortar till reduced to a milk; then add one ounce Tincture of Catechu, and ½ ounce of Laudanum. Dose: one to two table-spoonfuls, every two or three hours, as an Antacid and Astringent in Diarrhea.

No. 36, Dr. Jordan's Cholera Remedy. — Take Gum Guaiac, Prickly Ash Berries (or double as much bark of the root), Cloves and Cinnamon Bark, each, 2 ounces; Gum Camphor and Gum Myrrh, each, 1 ounce; Gum Kino, ½ ounce; reduce all to a coarse powder, and add 1 quart best French Brandy. Let stand ten days or two weeks to digest, shaking the bottle two or three times a day, to keep the ingredients from being impacted at the bottom; then strain and press out; then take Oil Anise and Oil Peppermint, each, 2 drams, Alcohol, 4 ounces; mix the Oils and Alcohol together in a bottle, and shake well

till they are cut; then add to the former, and it is ready for use. Dose: from one to two tea-spoonfuls every five, ten, fifteen, or thirty minutes, according to the urgency of the symptoms. In Cholera, it should be given frequently, and if there are Nausea and Vomiting, small doses are preferable — a single tea-spoonful every five minutes, till urgent symptoms are checked; then give it less frequently. It should always be given alone, unmixed with any thing else. In ordinary Diarrhea, one or two tea-spoonfuls taken once an hour, will be sufficient. It is also an excellent remedy for Colic and Pains in the Stomach and Bowels, and will generally settle the Stomach very soon, in case of Vomiting or Nausea. It should always be kept in the house. Where it is needed for immediate use, it may be made in an hour or less by using Alcohol instead of Brandy, and by boiling all in a stone jug, uncorked, by placing the jug in a vessel of Boiling Water, shaking or stirring frequently.

MISCELLANEOUS REMEDIES.

For Hoarseness. — Take 4 ounces of grated fresh Horseradish; saturate it in 1 pint of good Vinegar over night; then add ½ pint of Honey, and bring to the boiling point; then strain and squeeze out. Dose: one or two tea-spoonfuls several times a day. Very good for Hoarseness, Loss of Voice, and all ordinary Coughs.

Bleeding at the Lungs. — 1. Eat freely of raw Table Salt. 2. Or take 1 tea-spoonful, three or four times a day, of equal parts of powdered Loaf Sugar and Rosin. 3. Or boil 1 ounce of dried Yellow Dock Root in 1 pint of Milk. Take a cupful two or three times a day.

For Consumption. — Take 1 tea-spoonful of the expressed juice of Hoarhound (the herb), and mix with 1 gill of new Milk; drink it warm every morning. If persevered in, it will perform wonders.

Dyspeptic Lye. — Take Hickory Ashes, 1 pint; Soot, 3 or 4 ounces, Boiling Water, 2 quarts; pour on in a suitable vessel or crock; stir, and let stand over night; then pour off clear, and bottle. Dose: half a teacupful three times a day, and if too strong, weaken with water until palatable. A sure remedy for Dyspepsia.

Black Wash. — Take Lime Water, 4 ounces; Calomel, 1 dram; mix. To be used as a Wash for Foul and Indolent Ulcers, Venereal Sores, and the like. Excellent to wash Saddle-sores on horses' backs.

Lotion for the Itch. — Take Sulphate of Potash, 1 ounce; Water, 1 pint; Sulphuric Acid, ½ ounce; mix. Bathe the parts affected with the disease, twice a day with this lotion, first washing the parts well with Soap and Water. Change the clothes often, and keep the parts as clean as possible. Will soon cure.

Burnt Brandy in Diarrhea. — Take ½ pint of Brandy, and stir it with an iron poker nearly red-hot, previously adding ½ teacupful of Loaf Sugar. A table-spoonful or two to be taken three or four times a day.

Burnt Rhubarb in Diarrhea. — It may be useful to know the value of Burnt Rhubarb in Diarrhea; it is more serviceable in the Diarrhea attendant on the last stage of Consumption, than the Chalk Mixture or Opium, or any other of the usual remedies. It has been used, with the same pleasing effects, for more than twenty years, in Diarrhea. After one or two doses, the pains quickly subside, and the bowels return to their natural state. The dose is from ten to twenty grains, three to six times a day. The manner of preparing it is to burn the Rhubarb powder in an iron vesssel, stirring it until it is blackened; then bottle and cork.

Parched Rice in Diarrhea. — Parch ½ pint of Rice perfectly brown; then boil it, as usual, in Milk, and eat it slowly. It will check the Diarrhea in a few hours. Parched Corn, ground, and boiled in Milk, is also good.

Salt and Vinegar for Diarrhea. — Take good Cider Vinegar, ¼ tumblerful; common Table Salt, a heaping table-spoonful; Hot Water, enough to fill the tumbler; when the Salt is dissolved, give the compound as warm as can be borne, from a tea-spoonful to a table-spoonful, according to age, every five or ten minutes, until the whole is taken, if an adult; half the quantity for a child. If it should be vomited up, repeat the quantity, and in six or eight hours, should the disease not be checked, repeat also. It is a splendid remedy, easily obtained, and pleasant to take. If there be Sickness at the Stomach, or in case of Cholera, or Cholera Morbus, add to the compound a heaping tea-spoonful or two of ground Black Pepper. No one need fear the Cholera with this remedy. Give it freely.

Cure for a Wen. — Make a very strong brine of Turk Island Salt, by dissolving as much as possible in Hot Water; dip a piece of flannel, two or three times doubled, into the Brine, cold; then apply to the Wen, and keep it constantly wet with it, night and day, until suppuration takes place; then apply Poultices and heal. It is said to be effectual.

Wash for Scurvy. — Take Aloes and Extract of Liquorice, each, ½ ounce; Gum Myrrh, 1 ounce; pulverize all, and add to 1 pint of Brandy. Let stand, digest four days, then filter or strain, and bottle for use. Wash and rub the gums with this three times a day. A certain cure.

To Take Out Grease Spots. — Take Alcohol, 2 ounces; Urine, 2 ounces, and Aqua Ammonia, 1 ounce; mix, and with a bit of woolen cloth, wet with this liquid, rub the spot till you get out the Grease. This is the best preparation known for cleaning Clothes and Garments of Grease and other Dirt-spots.

Remedies for Nervous Diseases, No. 1. — I will here give you a few Recipes that have been found useful in many Nervous Affections, and which are simple, and can generally be had at any of the drug stores: To allay general Nervous excitability, and to strengthen the Nervous system, especially in delicate females, take Tincture of Valerian, 1 ounce; Sulphuric Ether, ½ ounce; Compound Spirits of Lavender, ½ ounce; Spirits of Camphor, 1 ounce; mix. Dose: from one to two tea-spoonfuls every two or three hours.

Remedies for Nervous Diseases, No. 2. — In great Nervous Weakness, attended with Fainting, or a disposition to Faint, the following compound will be found to give speedy and very general relief, and should always be kept on hand by persons troubled in that way: Take Tincture of Valerian, 1 ounce; Tincture of Castor, 1 ounce; Spirits of Ammonia, ½ ounce; Compound Spirits of Lavender, ½ ounce; Spirits of Camphor, 1 ounce; mix. Dose: from one to three tea-spoonfuls every ten or fifteen minutes, to once every two or three hours, according to symptoms.

Remedies for Nervous Diseases, No. 3. — In case of general Nervousness, attended with Indigestion, Sour Stomach, Restless Disposition, and Inability to sleep well at night, the following will be found serviceable: Take Tincture of Valerian, 1 ounce; Tincture of Lupulin, 1 ounce; Liquor of Potash, ½ ounce; mix. Dose: a tea-spoonful or two three times a day.

Dysentery. — A decoction or tea, made by boiling the common Rag Weed, is an excellent remedy for Dysentery, and also for the Bowel Complaint, in children. It may be given freely until the patient is relieved.

Jaundice. — A strong Bitters made of the Leaves, or Bark of the Root of the Peach-tree, taken in moderate doses three or four times a day, is one of the best remedies ever tried for Jaundice.

Itch. — Make a lather of Castile Soap. For three consecutive nights lather the whole body over on going to bed. Wash off each morning, and then rub off with Whisky.

A Cough or Cold. — A good remedy is a decoction of the Leaves of the Pine-tree, sweetened with White Sugar, to be drank freely, warm, when going to bed at night, and cold during the day.

For Croup. — Roast a large Red Onion well, squeeze the juice out, and sweeten it with Honey until it becomes a thick syrup; then add 2 drops of Spirits of Turpentine. This may be given to a child of six months or a year old, in the course of the day. Do not allow the child to go out in the wet or damp air.

For the Toothache. — Take 2 drams of Alum in powder, and 1 ounce of Nitrous Spirits of Ether; mix and dissolve; apply a little to the tooth, and in the tooth, if hollow. Apply it frequently; it will generally stop the worst Toothache in a short time. Or put into the tooth a pill made of Camphor Gum and Opium. Stop up the ear with cotton or wool as tight as you can, on the side on which the aching tooth is situated. This seldom fails to cure in the course of a day, or night.

Neuralgia. — If you desire to avoid the evils and pains which are incident to the innumerable forms of Neuralgia and Rheumatism, and the diseases resulting from colds of all sorts, you should avoid currents of air, especially when you are heated, and be always careful to wear next the skin woollen under-clothing, or at least what is known as *merino* — composed of half cotton and half wool. Have wool enough in the material to absorb the perspiration and preserve you from chilly sensations when the heat of your system is lessening. If requisite for your comfort in hot weather, you may wear the thinnest knit gauze under-garments.

We give a few recipes which have been tried, and found in many instances to be "just the thing." Take equal parts, say an ounce each, of Sweet Oil and Chloroform, and mix with 3 ounces of Spirits of Ammonia, and 4 drams of powdered Camphor Gum, and apply by rubbing the parts affected.

Rub or chafe the limb or locality, several times each day, with a compound of 2 ounces of Extract of Belladonna mixed with 4 ounces of Lard. At same time have your bowels open, if you have to use purgatives.

A covering upon the places where the pain is severe, may be made with a coating of Collodion, 1 ounce, into which is put a *gramme*, or one-twenty-fourth of an ounce, of Hydrochlorate of Morphine. Speedy relief will likely follow, and the coating will peel off after a day or two.

Patients have often been greatly benefited in the use of Lemons for the cure of Neuralgia and Rheumatism. Use the juice of one during each day, without sugar.

For Headache. — Put a handful of Salt into a quart bottle of Water, with 1 ounce of Hartshorn, and ½ ounce Spirits of Camphor, and keep well corked. Wet a rag and apply to the head as frequently as necessary until relief is given. Some persons who suffer from sick and nervous Headaches find an application of this sort very grateful and serviceable.

Ambrosial Hair Tonic. — Take Gum Benzoin, 2 drams; Castor Oil, 4 ounces, and Alcohol, 1 quart; shake well together; then add Oil Lavender and Oil Bergamot, each, 1 dram; Oil Cloves, Oil Rosemary, Oil Lemon, and Oil Neroli, each, 30 drops; Tincture of Cantharides, ½ ounce. Shake well to cut the Oils. A splendid and nicely perfumed Hair Tonic, to soften the hair, promote its growth, and prevent it from falling out, or turning gray.

Hair Restorative. — Take Lac Sulphur, 2 drams; Sugar of Lead, 1 dram; Rose Water, 8 ounces, mix. This is the "General Twiggs'" Recipe, and the basis of "Wood's Celebrated Hair Restorative." It will change gray hair to its original color, and will cause new hair to grow on bald heads. Apply a little to the hair or head once or twice a day.

Growth of Hair Increased and Baldness Prevented. — Take 4 ounces of Castor Oil, 8 ounces of good Jamaica Rum, 30 drops Oil of Lavender, and 10 drops Oil of Rose; anoint occasionally the head, shaking well the bottle previously.

To Destroy Lice. — Get, at the drug store, ½ ounce of Fish Berries (Cocculus Indicus), and put into a pint of common Whisky. Set carefully aside to digest for two or three days, and then apply to the head (just before the child goes to bed) until the hair is thoroughly wet through. Do not allow the liquid to get into the eyes, ears, or mouth, and keep it carefully out of the reach of others, for it is poisonous. One or two applications to the hair will destroy every vestige of Vermin, and thus save much annoyance.

Pile Ointment.—An eminent Peekskill physician strongly commends as an application in external Piles, an ointment made from Lard and equal parts of Appletree Bark, Witch Hazel Bark, and White Oak Bark.

POULTICES.

POULTICES are intended to accomplish various purposes. Some are cooling, others stimulating; some are discutients, others produce suppuration; while others are simply emollient. They are used as external applications, soft and pulpy; should be applied warm or tepid, and should not be allowed to get dry before being changed or renewed.

Bread. — Take stale Bread in crumbs, pour Boiling Water over it, and boil till soft, stirring it well; then take it from the fire, and gradually stir into the paste a little hog's Lard or Sweet Oil, so as to render the Poultice pliable.

Corn Meal. — Indian Meal, 5 table-spoonfuls; Rye Flour, 1 table-spoonful; to be gradually let through the fingers into Boiling Water, briskly stirring at the same time; then add a little Oil, as for the Bread Poultice.

Apple. — Apples, pared, cored, and well boiled, mashed into a pulp, form a very good Poultice.

Hop. — Boil a handful of Hops for a few minutes in a pint of Water, in a covered vessel, squeeze out the juice and strain. The liquor is now to be put again on the fire and thickened with Indian Meal, and a little Lard added, as it becomes cool.

Starch. — Starch, any quantity; thicken with Boiling Water. When partly cooled, stir in a little Lard or Oil.

Slippery Elm. — Take Slippery Elm, in powder, and mix with Water until somewhat thick, then boil a few minutes. It is to be applied warm.

Yeast. — Wheat Flour, 1 pound; Yeast, ½ pint; mix them together, over a gentle heat, until the mixture begins to rise, then apply warm.

Mustard. — Flour of Mustard, 1 part; Flax-seed Meal, or Wheat Flour, 1 part; make into a paste with Water. A little Oil or Lard should be added to prevent its sticking. When intended to be kept on for more than a few minutes, make with two or three parts of Flour to one of Mustard. Take off when the surface is well reddened, and never make a blister, because so painful and hard to heal over. A very good substitute for a Mustard Plaster is often at hand in Spirits or Oil of Turpentine, applied by dipping soft flannel or muslin in the liquid, and then wringing nearly dry, and covered with oiled silk or folds of muslin, to prevent evaporation. It is important often to keep a Poultice as warm and fresh as possible. This may be done by a covering of oiled silk, or several folds of muslin.

Spice. — Cinnamon, Allspice, Cloves, and Ginger, each, equal quantities; Honey or Molasses to mix.

Alum. — Put the Whites of a couple of Eggs into a plate, and then with a piece of Alum between the thumb and finger, stir it into a curd. To be applied wrapped in a piece of fine linen, having but one fold next the skin.

MISCELLANEOUS.

No. 1. — The best Poultice for ordinary occasions may be made of Bread boiled in Milk.

No. 2. — Brown Sugar and Soap make a good Poultice for a Boil.

No. 3. — 4 ounces of White Lily Roots; 1 pound of Figs, and 4 ounces of Meal or Bean Flour, boiled together with as much water as will cover them, make an excellent Poultice for Swellings and Suppurating Sores.

No. 4. — For Cancers and Running Sores, a grated Carrot, boiled quite soft, is excellent.

No. 5. — Salad Leaves, well boiled, will relieve acute pain.

No. 6. — A Poultice of Flax-seed or Chamomile Flowers, boiled with the tops of Wormwood, is an excellent one for Inflammations.

MISCELLANEOUS RECEIPTS,

WHICH MAY BE OF SERVICE.

To Destroy Insects on Trees. — A solution of Whale-oil Soap will destroy the numerous insects that infest trees and shrubbery. Dissolve the Soap in warm Water, making the "suds" of medium strength, and sprinkle the leaves with a Syringe. This specific is sure death to the Caterpillar, Miller, and the army of ravagers that destroy the foliage.

To Get Clear of Musketoes. — A correspondent of the *Dee* (S. C.) *Times*, gives that journal a recipe for clearing a room of Musketoes. He says: I have tried the following and find that it works like a charm: Take of Gum Camphor a piece about one-third the size of an egg, and evaporate it over a lamp or a candle, taking care that it does not ignite. The smoke will soon fill the room and expel the Musketoes.

How to Get Rid of Bed-Bugs. — Bed-bugs cannot stand hot Alum Water; indeed Alum seems to be death to them in any form. Take, say 2 pounds of Alum, reduce it to a powder, the finer the better, and dissolve in about 4 quarts of boiling Water; keep the Water hot till the Alum is all dissolved; then apply it hot to every joint, crevice, and place about the bedstead, floor, skirting or washboard around the room, and every place where the Bugs are likely to congregate, by means of a brush. A common syringe is an excel lent thing to use in applying it to the bedstead. Apply the Water as hot as you can Apply it freely, and you will hardly be troubled any more that season with Bugs. Whitewash the ceiling with plenty of dissolved Alum in the wash, and there will be an end to their dropping down from thence on to your bed.

The Elder Bush a Preventive of Insects. — It is not known by many persons that the common Elder Bush of our country is a great safeguard against the devastations of Insects. If any one will notice, it will be found that Worms or Insects never touch the Elder. This fact was the initial point of experiments of an Englishman in 1694, and he communicated his experiments to a London magazine. Accident exhumed his old work, and a Kentucky correspondent last year communicated to the *Dollar Newspaper* a copy of the practical results as asserted by the English experimenter: that the leaves of the Elder, scattered over Cabbage, Cucumbers, Squashes, and other plants subject to the ravages of insects, effectually shield them. The Plum, and other fruits subject to the ravages of Insects, may be saved by placing on the branches and through the tree bunches of Elder leaves.

The Unpleasant Odor Produced by Perspiration is frequently a source of vexation to gentlemen and ladies, some of whom are as subject to its excess as their fellow mortals of another color. Nothing is simpler than the removal of this odor at much less expense, and much more effectually, than by the application of such costly unguents and perfumes as are in use. It is only necessary to procure some of the Compound Spirits of Ammonia, and place about 2 table-spoonfuls in a basin of water. Washing the face, hands, arms, and under the arms, with this, leaves the skin as clean, fresh and sweet as one could wish. The wash being perfectly harmless, and very cheap, we recommend it, on the authority of one of our most experienced physicians, to our readers.

To Color the Hair Black. — Take a piece of unslaked Lime, a good article, reduce it to powder by pouring water on it, then mix with it a portion of Litharge, one-fourth to one-third as much Litharge as there is of Lime. Reduce to a fine powder, and pass through a fine sieve. You then have what has been sold at a high price under the name of "Unique

Powder," which has cost you perhaps one cent, as Litharge is cheap, and may be had at any drug or paint store. Put a sufficient quantity of this powder into a cup or saucer, and add to it sufficient hot Water to form a sort of paste about the consistency of thick cream; stir and mix well; then, just before going to bed at night, apply of this paste to the hair, whiskers, or wherever you wish to color, mixing it in among the hair well, which you can do best by dividing the hair into thin layers, mixing it well up to the roots, and all over the hair. When you have thus completely covered the hair, then lay all over it brown or common wrapping paper, made damp or wet, and bind over this a handkerchief or cloth, and over all a nightcap, and go to bed. In the morning rub and comb out the Powder, which is now dry, wash well with Soap and warm Water, then dry, and apply a little Hair-oil, if you like.

This is a little troublesome, but it is one of the best, most certain and durable Hair-dyes known, and perfectly harmless. If the hair is not black enough, or any parts not sufficiently colored, apply again the next night. It will color gray hair perfectly black; or if you put it on but lightly, or put in a less proportion of the Litharge, it will color brown, and will change red, sandy, or light hair as well. It remains black until the hair grows out again, and of course is to be applied again when that occurs, if you wish to maintain the color. The powder can be kept in a bottle or tight vessel any length of time ready for use.

Brilliant Whitewash. — Many have heard of the brilliant stucco Whitewash on the east end of the President's House, at Washington. The following is a recipe for making it, with some additional improvements learned by experiment:

Take ½ bushel of nice unslaked Lime, slake it with boiling Water, cover it during the process to keep in the steam. Strain the liquid through a fine sieve or strainer, and add to it a peck of clean Salt previously well dissolved in warm Water; 3 pounds of ground Rice, boiling to a thin paste, and stirred in boiling hot; ½ pound of powdered Spanish Whiting, and 1 pound of clean Glue, which has been previously dissolved by first soaking it well and then hanging it over a slow fire, in a small kettle, within a large one filled with Water. Add 5 gallons of hot Water to the whole mixture, stir it well, and let it stand a few days covered from the dirt. It should be put on right hot; for this purpose, it can be kept in a kettle on a portable furnace. It is said that about one pint of this mixture will cover a square yard, if properly applied with a brush, as in painting. It answers as well as Oil Paint for wood, brick, or stone, and is cheaper. It retains its brilliancy for many years. There is nothing of the kind that will compare with it, either for inside or outside walls. Coloring matter may be put in, and made of any shade you like.

Spanish Brown stirred in will make red or pink, more or less, according to the quantity. A delicate tinge of this is very pretty for inside walls. Finely pulverized common Clay, well mixed with Spanish Brown before it is stirred into the mixture, makes a lilac color. Lampblack in moderate quantities makes a slate color very suitable for the outside of buildings. Lampblack and Spanish Brown mixed together produce a reddish stone color. Yellow Ocher stirred in makes yellow wash, but Chrome goes farther, and makes a color generally esteemed prettier. In all these cases, the darkness of the shade will, of course, be determined by the quantity of coloring used. It is difficult to make a rule, because tastes are very different; it would be best to try experiments on a shingle, and let it dry. We have been told that green must not be mixed with Lime. The Lime destroys the color, and the color has an effect on the whitewash, which makes it crack and peel. If a larger quantity than five gallons is wanted, the same proportion should be observed.

Wash for Outbuildings. — Wishing to know how to make a Whitewash that is both durable and good, I thought the inquiry would perhaps be answered by you or your numerous correspondents. I have a fence inclosing about an acre of ground, a poultry-house and a small barn to whitewash, and I would like to have them appear well, and also the whitewash to last some time. — D. GETHART, Williamsport, Penn., 1859.

Take a barrel and slake in it carefully, with boiling Water, ½ bushel of fresh Lime.

Then fill the barrel two-thirds full of Water, and add 1 bushel of Hydraulic Lime or Water Cement. Dissolve in Water, and add 3 pounds of Sulphate of Zinc (White Vitriol), stirring the whole to incorporate it thoroughly. The wash should be of the consistency of thin paint, and may be laid on with a whitewash or other brush. The color is pale stone color, nearly white. If you wish it to be straw color, add Yellow Ocher, 2 pounds in powder; if drab, add 4 pounds raw Umber.

Another good wash is made as follows: Slake Lime with hot Water, in a tub, to keep in the steam. When dissolved, and in a half fluid state, pass it through a fine sieve. Take 6 quarts of this Lime and 1 quart of clean Rock Salt for each gallon of Water — the Salt to be dissolved by boiling, and the impurities to be skimmed off. To 5 gallons of this mixture (Salt and Lime), add 1 pound of Alum, ½ pound of Copperas, ¾ pound of Potash (the last to be added gradually), 4 quarts of fine Sand, or hard Wood Ashes. Add coloring matter to suit the fancy.

A correspondent of the *Country Gentleman* gives the following: 1 bushel unslaked Lime, ½ gallon Salt, 3 pounds powdered Alum, 3 pounds Saleratus. Mix, and put it in a tight barrel with head out. If the Lime is quite fresh, cold Water; if not, then use hot Water. Keep stirring while slaking, adding Water as required, so as not to become dry at any time. If it heats dry, it becomes lumpy, and must not be overflowed with water so as to prevent the slaking going on. Stir up well from the bottom. When finished, it may be as thick as mush. When to be applied by a brush, make the mixture the consistency of whitewash — about the thickness of cream. Apply the first coat very thoroughly, filling every crack or interstice between the bricks or in the boards. For wooden fences, a second coat of the same material is all that is required. Those who desire to have some other color than white, can add coloring matter to taste. — *Rural New Yorker.*

For Brick Houses. — For the second coat, add to the first-named materials twelve pounds melted Tallow, and mix as before. This coat is impervious to water — is brighter, looking clean longer than paint, and preserves the cement between the bricks better than paint.

Tomato Catsup. — The *Columbus* (Ga.) *Sun* gives the following as the best recipe for making Tomato Catsup: To ½ bushel of skinned Tomatoes add 1 quart of good Vinegar, 1 pound of Salt, ¼ pound of Black Pepper, 1 ounce of African Cayenne, ¼ pound of Allspice, 1 ounce of Cloves, 3 boxes of Mustard, 20 cloves of Garlic, 6 Onions, 2 pounds of Brown Sugar, and 1 handful of Peach Leaves. Boil this mass for three hours, constantly stirring it to keep it from burning. When cool, strain it through a fine sieve or a coarse cloth, and bottle it for future use. It will improve by age, and create and give zest to appetite almost under the ribs of death.

Instructions for Saving Garden Seeds. — When the Seeds are ripe, gather them without unnecessary delay; otherwise, the pods will split open and their contents be scattered upon the ground. Do not gather indiscriminately, but take only the finest looking heads. By this selection of the best plants and the best seed, good varieties may be even improved, and they certainly will not deteriorate. In this way many of our choice vegetables have been obtained. The practical stockbreeder's motto is that "like produces like," and he breeds from those animals only which possess the points he wishes perpetuated. Thus, if you select the earliest Peas from the earliest vines, for a number of seasons, you can obtain a variety ripening several days earlier than that with which you commenced.

Place the Seed-vessels, as soon as gathered, upon a cloth in the shade, so that they may become perfectly dry, at which time thresh out the Seed, by means of a small stick. Winnow out the chaff and small or defective Seed, and put the remainder in drawers or small paper bags. Every kind should be labeled with its name and the year when raised, in this manner, "*Early Salmon Radish*, 1856." This will prevent all possibility of the inexperienced cultivator mistaking Beet for Cabbage-seed, or sowing that which by the lapse of time has lost its powers of germination. Keep these drawers or bags in a cool, dry apartment, where no injury may be apprehended from moisture or the attacks of mice. With care Seeds may be preserved for several years, according to the annexed table:

The vitality of Seeds, under favorable circumstances, may be depended upon for the following periods: Parsneps, Rhubarb, and other thin, scaly seeds, for one year. Balm, Basil, Beans, Cadroon, Carrot, Cress, Indian Cress, Lavender, Leek, Okra, Onion, Peas, Pepper, Rampion, Sage, Salsify, Savory, Scorzonera, Thyme, Tomato, Wormwood, and small herbs generally, for two years. Artichoke, Asparagus, Corn Salad, Egg Plant, Endive, Indian Corn, Lettuce, Marigold, Marjoram, Mustard, Parsley, Rosemary, Rue, Skerritt, Spinach, and Tansey, for three yerrs. Borage, Borecole, Broccoli, Brussels Sprouts, Cabbage, Cauliflower, Radish, Sea Kale, Tarragon, and Turnip, for four years. Beet, Burnet, Celery, Cherval, Cucumber, Dill, Fennel, Hyssop, Melon, Pumpkin, Sorrel and Squash, from five to eight or ten years.

Age adds value to many Seeds, and some are in the habit of keeping Melon-seeds until they are six or seven years old, under the idea that they germinate more readily, and produce more prolific plants, in consequence.

Distances Traveled in Plowing. — The following table shows the distance traveled by a plow-team in plowing an acre of land, and the quantity of land worked in a day, at the rate of 16 or 18 miles per day of nine hours:

Breadth of Furrow Slice.	Space traveled in Plowing an Acre.	Extent Plowed per Day at the rate of	
		18 Miles.	16 Miles.
Inches.	Miles.	Acres.	Acres.
7	14 1-8th	1 1-4th	1 1-8th
8	12 1-4th	1 1-2	1 1-4th
9	11	1 3-4ths	1 1-2
10	9 9-10ths	1 4-5ths	1 3-5ths
11	9	2	1 3-4ths
12	8 1-4th	2 1-5th	1 9-10ths
13	7 1-2	2 1-3d	2 1-10th
14	7	2 1-2	2 1-4th
15	6 1-2	2 3-4ths	2 2-5ths
16	6 1-6th	2 9-10ths	2 3-5ths.

How to Build an Ice-house. — To build an Ice-house in *sandy or gravelly soils*, is one of the easiest things in the world. The drainage there is perfect; the dry and porous soil is of itself a sufficiently good *non-conductor*. All that is necessary to do, is to dig a pit, twelve feet square, and as many deep, line it with logs or joists faced with boards, cover it with a simple roof on a level with the ground, and fill it with ice. Such Ice-houses, built with trifling cost, and entirely answering the purpose of affording ample supply for a large family, are common in various parts of the country.

But it often happens that one's residence is upon a strong loamy or clayey soil, based upon clay or slate, or, at least, rocky in its substratum. Such a soil is retentive of moisture, and even though it be well drained, the common Ice-house just described will not preserve ice half through the summer in a locality of that kind. The clayey or rocky soil is always damp — it is always an excellent conductor, and the ice melts in it in spite of all the usual precautions. Something more than the common Ice-house is, therefore, needed in all such soils. "How shall it be built?"

1st. An Ice-house above ground. — An Ice-house above ground should be built upon the plan of having a double partition, with the hollow space between filled with some non-conducting substance.

In the first place, the frame of the sides should be formed of two ranges of upright *joists*, 6 by 4 inches; the lower ends of the joists should be put into the ground *without any sill*, which is apt to let air pass through. These two ranges of joists should be about two feet and one-half apart at the bottom, and two feet deep at the top. At the top these joists should be mortised into the cross-beams which are to support the upper floor. The

joists in the two ranges should be placed each opposite another. They should then be lined or faced on one side with rough boarding, which need not be very tight. This boarding should be nailed to those edges of the joists nearest each other, so that one range of joists shall be outside the building, and the other inside the ice-room or vault.

The space between these boardings or partitions should be filled with wet tan or saw-dust, whichever is cheapest or most easily obtained. The reason for using *wet* material for filling this space is, that during winter it freezes, and, until it is again thawed, little or no ice will melt at the sides of the vault.

The bottom of the ice-vault should be filled about a foot deep with small blocks of wood; these are leveled and covered with wood shavings, over which a strong plank floor should be laid to receive the ice.

Upon the beams above the vault a pretty tight floor should also be laid, and this floor should be covered several inches deep with dry tan or saw-dust. The roof of the Ice-house should have considerable pitch, and the space between the upper floor and the roof should be ventilated by a lattice-window at each gable-end, or something equivalent, to pass out the warm air which will accumulate beneath the roof. A door must be provided in the side of the vault to fill and discharge it; but it should always be closed up higher than the ice, and when not in use, should be kept closed together.

2*d. An Ice-house below ground.* — This is only thoroughly made by building up the sides of the pit with a good brick or stone wall, lain in mortar. Inside of this wall set joists, and build a light wooden partition against which to place the ice. A good floor should be laid over the vault as just described, and this should also be covered with dry tan or saw-dust. In this floor the door must be cut to give access to the ice.

As regards the bottom of the vault, the floor, the lattice-windows in the gables for ventilation, etc., the same remarks will apply that have just been given for the Ice-house above ground, with the addition that in one of the *gables*, in this case, must be the door for filling the house with ice.

If the ground where Ice-houses of either kind are built, is not porous enough to let the melted ice drain away, then there should be a waste pipe to carry it off, which should be slightly bent, so as always to retain enough water in it to prevent the passage of air upward into the Ice-house.

For the use of an ordinary family during a season, a cube of twelve or fourteen feet — that is, a house the vault of which will measure about twelve to fourteen feet "in the clear," every way, will be quite large enough, if properly constructed. An Ice-house, the vault of which is a cube of twelve feet, will hold about fifty tuns of ice.

How to Prevent Wet Feet. — A writer in the *Mechanics' Magazine*, who says he has had three pair of boots last him six years, and thinks he will not require any more for six years to come, tells how he treats them. "I put 1 pound, each, of Tallow and Resin in a pot on the fire; when melted and mixed, apply it hot to the boot with a painter's brush until neither the sole nor upper will soak any more. If it is desirous that the boots should immediately take a polish, dissolve 1 ounce of Wax in a tea-spoonful of Turpentine and Lampblack. A day or two after the boots have been treated with the Resin and Tallow, rub over them this Wax and Turpentine, but not before the fire: thus the exterior will have a coat of Wax alone, and shine like a mirror. Tallow and Grease become rancid, and rot the stitching or leather; but the Resin gives it an anti-septic quality, which preserves the whole."

For Cleaning and Restoring Kid Gloves, Silks, and Woollens. — A very useful article for cleansing and restoring kid gloves, ribbons, silks, and fine woollens, even cloths, and taking out grease spots and stains not from perspiration, is double-distilled benzine, known to druggists and others as *Rose Oil.* For a half-dime purchase a half-pint of this oil, and wash (as you would in clear water cotton stuffs) and thoroughly renovate a half-dozen pairs gloves, or ribbons and scarfs of greater bulk, which would cost one to two dollars to restore at a dyeing and scouring establishment. Dry carefully and iron, having muslin or paper between goods and iron. This oil evaporates easily. If prudently used in lamps adapted for it, it affords a cheap and safe light.

EXPLANATION

OF

MEDICAL, PHARMACEUTICAL, BOTANICAL AND CHEMICAL TERMS WHICH OCCUR IN THIS BOOK.

BY JOHNSON H. JORDAN, M.D.

REMARK. — The pronunciation is given in *parentheses*, thus ( ). Pronounce as follows: ā like a in mate, ä like a in bar; ē like e in fever; ī like i in fine, ĭ like i in marine, I like i in gird; ō like o in wrote, ŏ like o in love, ö like o in move; ū like u in mule.

The accent, thus ′, means that the syllable to which it is affixed, is to be pronounced with particular stress or force of voice. In several cases, the words have been respelled according to the pronunciation.

Abdomen (ab-dō′men, or ab′do-men). The lower belly, or that part of the body which lies between the thorax and the bottom of the pelvis.

Ablution (ab-lū′tion). Cleansing by water; washing of the body externally.

Abortion (a-bor′tion). A miscarriage, or producing a child before the natural time of birth.

Abscess (ab′scess). A cavity containing pus, or a collection of matter; as a common boil or felon, or any swelling that has come to a head.

Absorbent (ab-sor′bent). In anatomy, a vessel which imbibes; in medicine, any substance which absorbs or takes up the fluids of the stomach and bowels.

Accoucher (ac-coo-share′). A man who assists women in childbirth.

Acetabulum (a-ce-tab′u-lum). The socket that receives the head of the os femoris, or thigh bone.

Acid (ac′id). Sour; sharp or biting to the taste, as acetous acid or vinegar; citric acid, obtained from lemon, etc.

Acidity. The quality of being sour; tartness, or having a sharpness to the taste.

Acrid (ak′rid). Sharp, pungent, bitter, biting to the taste.

Actual Cautery (kau′ter-y). A surgical operation, performed by burning or searing with a hot iron.

Acuminate (a-kū′min-ate). Taper pointed; the point usually inclined to one side.

Acupuncture (ak-u-punk′ture). A surgical operation, performed by pricking the part affected with a needle.

Acute (a-cūte′). Sharp, ending in a sharp point; acute diseases are of short duration, attended with violent symptoms; it is opposite to chronic.

Adhesive (ad-hē′sive). Sticky, tenacious, apt or tending to adhere.

Adhesive Plaster. Sticking plaster.

Adhesive Inflammation. That kind of inflammation which causes adhesion.

Adjuvant (ad-jū′vant). An assistant; a substance added to a prescription to aid the operation of the principal ingredient or basis.

Adult age (a-dult′age). A person grown to full size or strength; manhood or womanhood.

Affection. Disorder, disease, malady.

Affusion (af-fū′sion). The act of pouring upon or sprinkling with a liquid substance.

Albumen (al-bū′men). The white of an egg. A principle of both animal and vegetable matter.

Alimentary (a-li-ment′a-ry). Having nourishing qualities, as food.

Alimentary Canal. The intestine by which aliments are conveyed through the body, and the useless parts evacuated.

Alkali (al′ka-lī or le). A substance which is capable of uniting with acids and destroying their acidity. Potash, soda, etc., are alkalies.

Alterative (al′ter-a-tive). A medicine which gradually changes the condition of the system, restoring healthy functions without producing sensible increase of the evacuations.

Alternate (al-tern′ate). When branches and leaves issue singly from opposite sides of the stem, in regular order, first on one side of the stem and then on the other they are said to be alternate.

Alveole (al′ve-ole). The socket in the jaw in which a tooth is fixed.

Alvine (al′vine). Pertaining to the intestines.

Amaurosis (am-aur-ō'sis). A loss or decay of sight from a palsy of the optic nerve, without any visible defect in the eye, except an immovable pupil.

Amenorrhea (am-en-or-rhe'a). An obstruction of the menstrual discharges.

Ament (am'ent). A kind of inflorescence, that is, a scaly sort of spike, as of the birch, the elder, the willow, the poplar, etc.

Amplexicaulis (am-plex-i-kaul'is). The basis, clasping the stem.

Amputation (am-pu-ta'tion). The act or operation of cutting off a limb or other part of the body.

Anasarca (a-na-sär'ca). A dropsy of the whole body; a general dropsy.

Anastomose (a-nas'to-mōse). To inoculate; to communicate with each other; applied to the vessels of the body, as the arteries and veins.

Anchylosis (ank-y-lō'sis). Stiffness of the joint.

Aneurism (an'eu-rism). A soft pulsating tumor, arising from the rupture of the coats of an artery.

Angina Pectoris (an-jī'na pec'tōris). A peculiar, painful, periodic, nervous affection of the chest.

Angina Tonsillaris (an-jī'na ton-sil-la'ris). Inflammation of the tonsils.

Angina Trachealis (an-jī'na trā-ke-al'is). Inflammation of the windpipe, or croup.

Annual (an'nu-al). Yearly. An annual plant that grows from the seed to perfection and dies in one season.

Annulated (an'nu-lā-ted). Surrounded by rings.

Anodyne (an'o-dyne). Any medicine which allays pain and procures sleep.

Antacid (ant'a-cid). A substance to counteract acids, as an alkali.

Anthelmintic (an-thel-min'tik). A worm-destroyer; worm medicine.

Anti-bilious (an'ti-bi'lious). Counteractive of bilious complaints.

Antidote (an'ti-dōte). A protective against or remedy for poison, or any thing noxious taken into the stomach, or any disease.

Anti-dysenteric (an-ti-dys-en-ter'ik). A remedy for dysentery.

Anti-emetic (an-ti-e-met'ik). A remedy to check or allay vomiting.

Anti-lithics (an-ti-lith'ics). A medicine to prevent or remove urinary calculi or gravel.

Anti-morbific (an-ti-mor-bif'ik). Any thing to prevent or remove disease.

Anti-scorbutic (an-ti-scor-bū'tik). A remedy for the scurvy.

Anti-septic (an-ti-sep'tik). That which resists or removes putrefaction or mortification.

Anti-spasmodic (an-ti-spas-mo'dik). That which relieves spasms, cramps and convulsions.

Anti-syphilitic (an-ti-syph-i-lit'ik). Remedy against syphilis, or the venereal disease.

Aperient (a-pē'ri-ent). A gentle purgative or laxative.

Apex (ā'pex). The top or summit; the termination of any part of a plant.

Aroma (a-rō'ma). The fragrance of plants and other substances, experienced by an agreeable smell.

Aromatic (a-ro-mat'ik). A fragrant, spicy plant, drug, or medicine.

Arthrodia (är-thrō'di-a). A joint movable in every direction.

Articulated (är-tic'u-la-ted). Having joints.

Ascarides (as-car'i-dēs). Pin-worms, or thread-worms, always found in the lower portion of the bowels, or anus.

Ascites (as-cī'tēs). Dropsy of the belly.

Assimilation (as-sim-i-lā'tion). The conversion of food into the fluid or solid substances of the body.

Asthmatic (asth-mat'ik). A person troubled with asthma, or a difficulty of breathing.

Astringent (as-trinj'ent). Binding; contracting; strengthening; opposed to laxative.

Atony (at'o-ny). Debility; want of tone; defect of muscular power.

Atrophy (at'ro-phy). A wasting of flesh and loss of strength, without any sensible cause.

Axillary (ax'il-la-ry). Pertaining to the armpit.

Axillary Glands. Situated in the armpit, secrete a fluid of peculiar odor, which stains linen and destroys the color of clothing.

Balsamic (bal-sam'ik). Medicines employed for healing purposes.

Belching (belch'ing). Ejecting wind from the stomach.

Biennial (bī-en'ni-al). In botany, continuing for two years, and then perishing, as plants whose roots and leaves are formed the first year, and which produce fruit the second.

Bifurcation (bī-fur-cā'tion). Division into two branches.

Biternate (bī-tern'ate). Doubly ternate, or having six leaves on the leaf stalk.

Bract (brakt). A small leaf growing near the flower, and differing in form and color from the other leaves.

Bronchial (bronch'i-al). Belonging to the ramifications of the windpipe in the lungs.

Bulbous (bul'bous). Round or roundish.

Cachexy (ka-khex'y). A bad condition of the body; where the fluids and solids are vitiated; without fever or nervous disease.

Cadaverous (ka-dav'er-ous). Having the appearance or color of a dead human body; wan; ghastly; pale; like unto death.

Calculi (kal'cu-lī). The gravel and stone formed in any part of the body, as the bladder and kidneys.
Callous (kal'lous). Hard; hardened; indurated; as an ulcer, or some part of the body.
Callus (kal'lus). Bony matter which forms about fractured bones, serving to unite them.
Caloric (ka-lor'ic). The element of heat.
Calyx (kā-lyx). The outer covering of a flower.
Campanulate (kam-pan'u-late). Bell-shaped.
Capillary (kap'il-la-ry). Resembling a hair. A minute tube connecting the arteries and the veins.
Capsule (kap'sule). The seed vessel of a plant.
Carbon (kär'bon). Charcoal.
Carbonic Acid Gas. The fixed air in the bottom of wells; a combination of two parts of oxygen with one part of carbon.
Carminative (kär'min-a-tive). A medicine which allays pain by expelling wind from the stomach and bowels.
Cartilage (kär'ti-lage). Gristle; a substance similar to, but softer than bone.
Catamenia (kat'a-mē-nia). The monthly evacuations of females; the menstrual discharges.
Cataplasm (kat'a-plasm). A poultice.
Cathartic (ka-thär'tic). Purgative; a medicine that cleanses the bowels.
Catheter (kath'e-ter). A tubular instrument introduced into the bladder through the urethra for drawing off the urine.
Caudex (kau'dex). The main stem of a tree or plant; the stock which proceeds from a seed, one part ascending and forming the body above ground, the other descending and putting forth roots.
Caustic (kaus'tic). Burning; a substance which burns or corrodes living tissues when applied to them, as *lunar caustic*, or nitrate of silver.
Cautery (kau'ter-y). A burning, searing or corroding any part of the animal body.
Cellular (cel'lu-lar). Consisting of or containing cells.
Cerebellum (cer-e-bel'lum). The hinder and lower part of the brain.
Cerebrum (cer'e-brum). The front and larger part of the brain.
Cespitose (ces'pi-tose). Growing in tufts.
Cespitous (ces'pi-tous). Pertaining to turf; turfy.
Chancre (shank'er). A venereal ulcer or sore.
Choleric (kol'er-ic). Easily irritated; irritable.
Chordee (kord-ee'). A painful contraction or drawing up of the penis.
Chronic (kron'ic). Continuing for a long time; inveterate; the opposite of acute.
Cicatrix (si-kā'trix). A scar remaining after a wound.
Clyster. An injection; a liquid substance thrown into the lower intestines.
Coagulation (ko-aj'u-la-tion). Changing from a fluid to a liquid state.
Coalesce (kō-a-less'). To grow together; to unite.
Colliquative (kol-lik'wa-tiv). Melting, dissolving; applied to excessive evacuations of the body, which reduce the strength.
Coma, or Comatose (kō'ma, or kō'ma-tose). Lethargy; disposed to sleep.
Combustion (kom-bus'tion). Burning with a flame.
Concave (kon'kave). Hollow. A concave leaf is one whose edge stands above the disk.
Concrete (kon'krete). A compound; a united mass.
Confluent (kon'flu-ent). Flowing together; meeting in their course, as two streams uniting.
Congenital (kon-jen'i-tal). Begotten or born with.
Conglobate (kon-glō'bāte). Formed into a ball.
Connate (kon'nāte). United in origin; united into one body.
Constipation (kon'sti-pā-tion). Costiveness; obstruction or hardness of the contents of the intestines.
Constriction (kon-strict'ion). A contraction, or drawing together.
Contagious (kon-tā'jious). Catching, or that may be communicated by contact.
Contusion (kon-tū'sion). A bruise.
Convalescent (kon-va-les'cent). Recovering health and strength after sickness or debility.
Convoluted (kon'vo-lū-ted). Rolled together, or one part on another.
Cordate (kord'ate). Heart-shaped, as a leaf.
Cordial (kord'i-al). A medicine to increase the strength or raise the spirits.
Coriaceous (kō-re-ā-'shus). Tough and elastic like cork or leather; leathery.
Corolla (ko-rol'la). The inner covering of a flower.
Corpse (korps). The dead body of a human being.
Corroborant (kor-rob'o-rant). A medicine that strengthens the human body when weak.
Corrosive (kor-rō'sive). That which has the quality of eating or wearing gradually.
Corrosive Sublimate (kor-rō-sive sub'li-māte). Bichloride of mercury; an acrid poison of great virulence.
Cortex (kor'tex). The bark of a tree or plant.
Corymb (kor'imb). A cluster of flowers at the top of a plant, forming an even, flat surface, as the flowers of the elder bush.

Cranium (krā'ni-um). The skull.
Crassamentum (kras-sa-men'tum). The thick, red part of the blood.
Crepitas (krep'i-tas). A sharp, abrupt sound.
Cuneiform (ku-nē'i-form). Wedge-shaped.
Cutaneous (ku-tā'ne-ous). Belonging to the skin, or cutaneous diseases.
Cuticle (ku'ti-cle). The scarf or outer skin.
Decarbonize (de-car'bon-ize). To deprive of carbon or coal.
Decoction (de-kok'shun). Any medicine made by boiling a substance in water to extract its virtue.
Delirium (de-lir'i-um). Disorder of the intellect; wildness or wandering of the mind.
Demulcent (de-mul'cent). A mucilaginous medicine which soothes the tender and raw surfaces of diseased parts.
Deobstruent (de-ob'stru-ent). A medicine designed to remove obstructions and open the natural passages of the fluids of the body.
Depletion (de-plē'tion). Blood-letting, or any process that rapidly reduces the strength.
Depuration (dep-u-rā'tion). Cleansing from impure matter.
Derm. The natural covering of an animal, or skin.
Detergent (de-ter'jent). A medicine that cleanses the vessels or skin from offending matter.
Diagnosis (dī-ag-nō'sis). The distinction of one disease from another by its symptoms.
Diagnostics (dī-ag-nos'tics). The symptoms by which a disease is distinguished.
Diaphoresis (dī-aph-o-rē'sis). Increased perspiration, or sweat.
Diaphoretic (dī-aph-o-ret'ic). Sweating; any medicine which promotes sweating.
Diaphragm (di'a-fram). The midriff, or muscular division between the chest and belly.
Diarrhea (dī-ar-rē'a). A morbidly frequent evacuation of the intestines.
Diathesis (dī-ath'e-sis). The disposition of body, good or bad.
Dichotomous (dī-kot'o-mus). Regularly divided in pairs, from top to bottom.
Digest (dī-jest'). To dissolve in the stomach; in medicine, to make a tincture by steeping herbs in alcohol.
Digitate (dij'i-tāte). Divided like fingers.
Diluent (dī-lu'ent). That which thins, weakens or reduces the strength of liquids.
Diluting (dī-lu'ting). Weakening.
Discuss (dis-cuss'). To disperse or scatter.
Discutient (dis-cū'shent). A medicine which scatters a swelling, or tumor, or any coagulated fluid or body.
Diuretic (dī-u-ret'ic). A medicine which promotes the flow of urine.
Dolor (dō-lor). Pain
Drastic. Powerful, efficacious.
Duodenum (du-od'e-num). The first of the small intestines.
Efflorescence (ef-flō-res'cence). Eruption or redness on the skin, as in measles, scarlet fever, etc.
Effluvia (ef-flu'via). Exhalations from substances, as from flowers or decaying matter.
Electuary (e-lec-tu-ā'ry). Medicine compounded with syrup or honey.
Eliminating (e-lim'in-ā-ting). Discharging or throwing off.
Emaciation (e-mā'ci-ā-tion). Leanness, wasting of the flesh.
Emesis (em'e-sis). A vomiting.
Emetic (e-met'ic). A medicine given to cause vomiting.
Emmenagogue (em-men'a-gōgue). A medicine which promotes the menstrual discharges.
Emolient (ē-mol'li-ent). A softening application which allays irritation.
Emulsion (ē-mul'sion). A soft, milk-like remedy, as oil and water mixed with mucilage or sugar.
Enema (en-e'ma). An injection.
Enteritis (en-ter-ī'tis). Inflammation of the bowels.
Entozoa (en-to-zo'a). Intestinal worms; living in some part of an animal body.
Epidemic (ep-i-dem'ic). A prevalent disease.
Epidermis (ep-i-derm'is). The outer skin.
Epigastric (ep-i-gas'tric). Pertaining to the upper and anterior portion of the abdomen.
Epileptic (ep-i-lep'tic). Subject to epilepsy or the falling sickness.
Epispastic (ep-i-spas'tic). An application for blistering.
Erosion (e-rō'sion). The act or operation of eating away.
Errhine (er-rīne). A medicine for snuffing up the nose to promote the discharge of mucus.
Eructation (e-ruc'tā-tion). Belching; expelling wind from the stomach through the throat.
Eruption (e-rup'tion). A breaking out of humors on the skin.
Escharotic (es-ka-rot'ic). Caustic; an application which sears or destroys the flesh.
Evacuant (e-vac'u-ant). A medicine to promote the secretions and excretions.
Evacuate (e-vac'u-āte). To empty; to discharge from the bowels.
Exacerbation (ex-ac-er-bā'tion). Increase of violence in a disease.
Exanthema (ex-an-thē'ma). An eruption; an efflorescence on the skin, or eruption accompanied with fever.
Excitant (ex-ci'tant). A stimulant.

Excoriate (ex-co′ri-ate). To gall; to abrade or scrape off the skin in any way.
Excrescence (ex-cres′cence). A preternatural or abnormal protuberance; as, a wart, or mole.
Excretion (ex-crē′tion). Useless matter thrown off from the system, as the perspiration, urine, etc.
Exotic (ex-ot′ic). Introduced from a foreign country.
Expectorant (ex-pec′to-rant). A medicine which promotes the discharge of phlegm or matter from the lungs.
Expectoration (ex-pec-to-rā′tion). The act of discharging phlegm by coughing and spitting.
Expiration (ex-pi-rā′tion). The act of breathing out the air from the lungs.
Extravasation (ex-trav-a-sā′tion). Effusion; the act of emptying or forcing a fluid out of its proper vessels.
Exudation (ex-u-dā′tion). Sweating; the discharge of moisture on the surface of bodies
Fæces (fē′seez). Excrement; the discharges from the bowels.
Fasciæ (fash′e-ä). Bandages; membranes covering the muscles.
Fauces (fau′cēs). The back part of the mouth at the entrance of the throat.
Febrifuge (feb′ri-fuge). A medicine that expels fever and produces perspiration.
Febrile (fē′brile). Having the symptoms of fever; feverish.
Fetid (fe′tid). Having a rank, disagreeable odor.
Fetus (fe′tus). The child in the womb.
Fiber (fi′ber). A thread; a fine, slender substance which constitutes the flesh and muscles of animals.
Fibril (fi′bril). The branch of a fiber; a very slender thread.
Filament (fil′a-ment). A thread or fiber.
Filter (fil′ter). A strainer.
Filtration (fil-trā′tion). Straining; the separation of a liquid from the undissolved particles floating in it.
Fistula (fis′tu-la). A deep, narrow, crooked ulcer.
Flaccid (flak′sid). Soft and weak, lax, limber.
Flatulency (flat′u-len-cy). Wind in the stomach and intestines, causing uneasiness and often belchings.
Flexible (flex′i-ble). Easily bent; yielding to pressure.
Flush. A sudden flow of blood to the cheeks or face.
Flux. An unusual flowing or discharge from the bowels.
Fomentation (fō-men-ta′tion). Bathing by means of flannels dipped in hot water or medicated liquids.
Forceps (for′ceps). An instrument like a pair of pincers, for extracting teeth, clipping membranes, etc.
Formula (for′mu-la). A prescription.
Fundament (fun′da-ment). The seat; the lower extremity of the large intestines.
Fungus (fun′gus). A spongy excrescence, as proud flesh.
Gangrene (gan′grēne). Mortification of living flesh.
Gargle (gär′gle). A wash for the mouth and throat.
Gastric (gas′tric). Belonging to the stomach.
Gastritis (gas-trī′tis). Fever or inflammation of the stomach.
Gland. A soft, fleshy organ for the secretion of fluids, or to modify fluids that pass through them.
Glutens (glū′tens). The large thick muscle on which we sit.
Hectic (hec′tic). Habitual; an exasperating and remitting fever, with chills, heat and sweat.
Hematosis (hem-a-tō′sis). An excessive or morbid quantity of blood.
Hemoptysis (he-mop′ty-sis). A spitting of blood.
Hemorrhage (hem′o-raje). Bleeding; a flow of blood, as from the lungs, nose, etc.
Hemorrhoids (hem′o-roids). The piles.
Hepatic (he-pat′ic). Pertaining to the liver.
Herbaceous (her-bā′shus). Pertaining to herbs.
Hereditary (he-red′i-ta-ry). Descended from a parent; inherited.
Herpes (her′pēēz). An eruption on the skin, as tetter, ringworm, etc.
Hernia (her′nia). A rupture and protrusion of some part of the abdomen.
Hydragogue (hy′dra-gōg). A purgative that causes a watery discharge from the bowels.
Hydrogen (hy′dro-gen). One of the elementary principles always existing in water, of which it composes a ninth part.
Hydrogen Gas. An aëriform fluid, the lightest body known. It does not support animal life or combustion, but is itself combustible.
Hydrophobia (hy′dro-phō-bia). A dread of water; the rabid qualities of a mad dog.
Hygiene (hy-ji-ēne). The art of restoring or preserving health without recourse to medicine.
Hypochondriac (hy-po-kon′dri-ac). A person afflicted with debility, lowness of spirits, or melancholy, or, in other words, with the blues.
Hysterical (hys-ter′i-cal). Troubled with fits or nervous affections.
Idiopathy (id-i-op′a-thy). A morbid condition not preceded by any other disease.
Idiosyncrasy (id-i-o-syn′cra-sy). Peculiarity of constitution or temperament; peculiarly

susceptible of certain extraneous influences, and hence liable to certain diseases which others would escape.

Ileum (il'e-um). The lower part of the small intestines.

Incrassation (in-cras-sā'tion). Thinking. Thickening.

Incubus (in'cu-bus). The nightmare.

Indigenous (in-dij'e-nous). Native.

Indurated (in'du-rā-ted). Hardened.

Infection (in-fec'tion). Contagion; communication of disease from one to another.

Inflammation (in-flam-mā'tion). Redness and swelling of any part of the body, with heat, pain and symptoms of fever.

Inflated (in-flā'ted). Filled or swelled with air.

Infusion (in-fū'sion). Medicine prepared by steeping either in cold or hot water.

Ingestion (in-jes'tion). Throwing into the stomach.

Injection (in-jec'tion). A liquid projected into the bowels by means of a syringe; a clyster.

Inoculation (in-oc-u-lā'tion). Communicating a disease to a person in health by inserting contagious matter in his skin or flesh.

Inspiration (in-spi-rā'tion). Drawing or inhaling air into the lungs.

Inspissation (in-spis-sā'tion). Rendering a fluid thicker by evaporation.

Integument (in-teg'u-ment). The skin, or a membrane that invests a particular part.

Intermittent (in-ter-mit'tent). Ceasing at intervals.

Lanceolate (lan'ce-o-late). Oblong and gradually tapering to the outer extremity.

Larynx (lar'inx). The upper part of the windpipe.

Laxative (lax'a-tive). A gentle purge; a medicine that loosens the bowels.

Lethargy (leth'ar-jy). Unusual or excessive drowsiness.

Leucorrhea (lu-kor-rē-a). The whites.

Lesion (lē'sion). A rupture or tearing of the flesh; a wound.

Liniment (lin'i-ment). A species of soft ointment.

Lithontriptic (lith-on-trip'tic). A solvent of the stone or gravel in the bladder.

Lithotomy (li-thot'o-my). The operation of cutting for stone in the bladder.

Lochial (lō'ki-al). Pertaining to discharges from the womb after childbirth.

Lumbago (lum-bā'go). Rheumatism in the hip joints; pains in the loins and small of the back.

Lumbar (lum'bar). Pertaining to the loins.

Maceration (mac-er-ā'tion). Dissolving or softening with water.

Malaria (ma-lā'ri-a). Bad air; air which tends to cause disease.

Manna (man'na). The inspissated juice or gum of a species of ash, used in medicine. It is gently purgative.

Membrane (mem'brane). A thin, white, flexible skin formed of fibers, and covering some part of the body.

Menses (men'sēs). The monthly evacuation of females.

Menstrual (men'stru-al). Pertaining to the menses; monthly.

Menstruum (men'stru-um). A solvent; any liquid used to dissolve solid substances.

Metastasis (me-tas'ta-sis). A removal of a disease from one part to another.

Miasma (mi-as'ma). Malaria; the exhalation from swamps and decaying matter.

Morbid (mor'bid). Diseased; unsound.

Morbific (mor-bif'ic). Causing disease.

Mucilage (mu'ci-laje). A viscid or ropy fluid substance.

Mucus (mu'cus). The sticky, tenacious fluid secreted by the mucous membrane.

Muscles (mus'cles). The organs of motion. They constitute the flesh.

Narcotic (nar-cot'ic). Producing sleep; a medicine to produce sleep and relieve pain.

Nausea (naw'shea). Sickness at the stomach, accompanied with a propensity to vomit.

Nephritic (ne-phrit'ic). Pertaining to the kidneys.

Nervine (ner'vin). A medicine that acts on the nerves.

Normal (nor'mal). Natural, regular.

Nutritious (nu-trish'us). Nourishing.

Oblong (ob'long). Longer than broad.

Obtuse (ob-tūse'). Dull, not acute.

Omentum (o-men'tum). The caul or covering of the bowels.

Ophthalmia (oph-thal'mia). Inflammation of the eyes.

Ossefy (os-se-fy'). To change flesh or other soft matter into a hard, bony substance.

Oval (ō'val). Egg shaped.

Oxygen (ox'y-gen). An elementary substance, being one of the constituents of atmospheric air.

Palpitation (pal-pi-tā'tion). A beating of the heart; sometimes a violent beating caused by some sudden emotion, as fear, etc.

Panacea (pan-a-cē'a). A cure-all; a universal medicine.

Paralysis (pa-ral'y-sis). Palsy; a loss of the power of motion in any part of the system.

Paralytic (par-a-lyt'ic). Affected with or inclined to palsy.

Paroxysm (par'ox-ism). A fit of any disease; a sudden and temporary aggravation of a disease.
Pathology (pa-thol'o-jy). The doctrine of the causes, symptoms and nature of disease.
Pectoral (pec'to-ral). Pertaining to the breast. Medicine for the cure of breast and lung complaints.
Peduncle (pe-dunk'l). The stem that supports the flower or fruit of a plant.
Perennial (per-en'ni-al). Enduring; continuing from year to year.
Pericardium (per-i-kär'di-um). The sack inclosing the heart.
Permeate (per-me-āte). To pass through the pores.
Perspiration (per-spi-rā'tion). Sweat; insensible evacuation of the fluids through the pores of the skin.
Petiole (pet'i-ōle). A leaf-stalk.
Petecchiæ (pe-tek'ki-ā). Purple spots on the skin in malignant fevers.
Pinnate (pin'nate). A species of compound leaf.
Plethoric (pleth'o-ric). Fullness or excess of blood.
Pleura (pleu'ra). A thin membrane which lines the inside of the chest and envelopes the lungs.
Pneumonia (nū-mō'nia). Inflammation of the lungs.
Polypus (pol'y-pus). A pear-shaped tumor.
Prolapsus (prō-lap'sus). A falling down or forward of some part of the body.
Prognosis (prog-no'sis). Judgment of a disease by its visible symptoms.
Prophylactic (prōph-y-lac'tic). A medicine to prevent disease.
Pubescent (pu-bes'cent). Covered with down or very short hairs.
Pulmonary (pul'mo-nā-ry). Pertaining to or affecting the lungs.
Pulp. A soft mass.
Pungent (pun'jent). Sharp, piercing, biting, stimulating.
Purgative (pur'ga-tive). A medicine that evacuates the bowels.
Purulent (pūr'u-lent). Consisting of pus or matter.
Pus. The yellowish-white matter in ulcers, wounds and sores.
Pustules (pus'tules). Pimples.
Putrescent (pu-tres'cent). Becoming putrid or rotten.
Pyrosis (py-rō'sis). A peculiar disease of the stomach called water-brash.
Rectum (rec'tum). The last part of the large intestines.
Refrigerant (re-frij'er-ant). A cooling medicine.
Regimen (rej'i-men). The regulation of diet in order to preserve or restore health.
Resolvent (re-sol'vent). A medicine to dissipate inflammation and to prevent tumors from coming to a head.
Restorative (re-stor'a-tive). A medicine for restoring vigor and health.
Resuscitate (re-sus'ci-tate). To recover from apparent death.
Reticulated (re-tic'u-la-ted). Formed like a net or net-work.
Rigid (rij'id). Stiff, unyielding.
Rubefacient (ru-be-fā'shent). An application which produces redness of the skin.
Rubific (ru-bif'ic). Making red.
Saccharine (sak'ka-rin). Sugary; having the qualities of sugar.
Saliva (sa-lī'va). Spit or spittle. It serves to moisten the mouth and tongue, and also the food.
Salivation (sal-i-vā'tion). The act of increasing the secretion of saliva.
Sanative (san'a-tive). Healing or tending to heal.
Sanguine (sang'gwin). Abounding in blood, or having the color thereof.
Scirrhous (skir'rus). Hard, knotty.
Scorbutic (scor-bū'tic). Pertaining to or partaking of the nature of scurvy.
Scrotum (scrō'tum). The pouch or bag containing the testicles.
Secretion (se-crē'tion). The act of producing from the blood substances different from the blood itself or from any of its constituents, as bile, saliva, mucus, etc., also the substance so secreted.
Sedative (sed'a-tive). A quieting, soothing medicine, which allays irritation and soothes pain.
Sedentary (sed'en-ta-ry). Accustomed to or requiring much sitting; inactive.
Seminal (sem'i-nal). Pertaining to or contained in seed.
Septic (sep'tic). A promotive of putrefaction.
Serous (sē'rous). Thin, watery, like whey.
Serum (sē'rum). The watery parts of the blood, or of milk.
Sinapism (sin'a-pism). A mustard plaster.
Sinew (sin-ew'). That which unites a muscle to a bone.
Sialagogue (si-al'a-gōg). A medicine that promotes the flow of saliva.
Slough (sluff). To separate from the sound flesh, as the matter formed on a sore.
Solution (so-lū'tion). A liquid in which a solid substance has been dissolved.
Solvent (sol'vent). Having the power to dissolve solid substances.
Spasm. A violent but brief contraction of the muscles or fibres.

Spasmodic (spas-mod'ic). Consisting in or relating to spasms.
Spleen. The milt.
Stimulant (stim'u-lant). An exciting agent.
Stomachic (sto-mak'ik). A cordial for the stomach, exciting its action.
Stool. A discharge from the bowels.
Strangury (stran'gu-ry). A painful and difficult discharge of the urine.
Stricture (stric'ture). A morbid contraction of any passage of the body.
Styptic (styp'tic). A medicine which coagulates the blood and stops bleeding.
Sudorific (sū-do-rif'ic). A sweat-producing medicine.
Suppurate (sup'pu-rāte). To form purulent matter or pus, as a boil.
Suture (sū'ture). The peculiar joint uniting the bones of the skull.
Symptom (symp'tom). A sign or token; the peculiar marks of any disease.
Syncope (sin'ko-pe). A fainting or swooning.
Syphilitic (syph-i-lit'ic). Pertaining to the venereal disease, or pox.
Syringe (syr'inge). An instrument for injecting liquids into the lower bowels.
Tendon (ten'don). A bunch of fibres attaching a muscle to a bone.
Tenesmus (te-nez'mus). A distressing pressure, as if the bowels must be discharged immediately.
Tense, or Tension (ten'sion). Stretched or strained; rigid.
Tepid (tep'id). Moderately warm.
Terminal (term'i-nal). Forming the end; growing at the end of a branch or stem.
Ternate (ter'nāte). Three leaves formed together on a leaf-stalk.
Tertian (ter'shan). Occurring every other day, as in some forms of intermittent fever.
Tincture (tinc'ture). Medicine dissolved in alcohol or proof spirits.
Thorax (thō'rax). The cavity of the chest.
Tomentose (tō-men-tose'). Downy, nappy, covered with the finest hairs or down
Trachea (trā'ke-a). The windpipe.
Translated (trans-lā'ted). Removed from one place to another.
Transude (tran-sude'). To pass through pores or interstices.
Triennial (tri-en'ni-al). Continuing three years.
Tubercle (tū'ber-kl). A pimple; a swelling or tumor.
Tuberous (tū'ber-ous). Consisting of round, fleshy bodies, as potatoes.
Tumefaction (tū-me-fac'tion). The act of swelling or forming a tumor.
Tumor (tū'mor). A distension or enlargement of any part of the body; a swelling.
Tunic (tū'nic). A membrane that covers or composes some part or organ.
Typhoid (ty'phoid). Resembling typhus; weak; low.
Typhus (ty'phus). A simple continuous fever, attended with exhaustion, weakness of pulse, and frequently strong propensities to sleep.
Ulcer (ul'cer). A sore, discharging pus.
Umbilic (um-bil'ic). The navel, or pertaining to the navel.
Ureter (u-rē'ter). The duct or tube through which the urine passes from the kidneys to the bladder.
Urethra (u-rē'thra). The canal by which the urine is conducted from the bladder and discharged.
Urinary (u'ri-na-ry). Pertaining to urine.
Urine (u'rin). A fluid secreted from the kidneys and discharged from the bladder by the urethra.
Uterus (u'te-rus). The womb.
Uvula (u'vu-la). The small conical body projecting from the middle of the soft palate.
Vaccinate (vak'sin-āte). To inoculate with the cow-pox, by inserting the vaccine matter in the skin.
Vaccine (vak'sin). Pertaining to cows, or derived from them.
Vagina (va-jī'na). The passage which connects the vulva with the womb.
Varioloid (vā'ri-o-loid). A modified form of the small-pox.
Variolous (va-rī'o-lous). Pertaining to or denoting the small-pox.
Venery (ven'er-y). Sexual intercourse.
Vermifuge (verm'i-fuje). A worm-destroyer; a medicine that expels worms.
Vertigo (ver'ti-go). Dizziness; swimming of the head.
Vesication (ves-i-kā'tion). Raising blisters on the skin.
Vesicle (ves'i-cle). A small cavity; a little bladder filled with some humor.
Virus (vī'rus). Contagious matter.
Viscera (vis'ce-ra). The bowels or internal organs of the body.
Viscid (vis'cid). Sticky, tenacious, like glue.
Vitiate (vish'é-ate). To injure; to impair; to spoil.
Volatile (vol'a-tile). Easily evaporated; substances that waste away on exposure to the atmosphere.
Vulnerary (vul'ner-a-ry). Pertaining to wounds; medicines for the cure of wounds.
Vulva (vul'va). The external parts of the female organs of generation.

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APPENDIX.

REMEDIES FOR DISEASES OF DOMESTIC ANIMALS.

PREFATORY NOTE.

THE horse holds important relations to the health, convenience, and comfort of the family. Contrary to the anticipations of many, the demand for the noble animal has not lessened since the days of steam locomotion. The improvements which have been made in our country in his breeding and training in recent years, and the fabulous prices which have frequently been paid for single animals, are well calculated to excite interest in him.

In this volume, of *necessity*, he has found a place among our choicest means for PHYSICAL CULTURE; and we here subjoin much material that will unquestionably be found useful, to those whom he serves, in relieving his ailments.

All may feel assured of the high value of the formulas or recipes given. They are more numerous, perhaps, than seems necessary, but in this respect cannot be otherwise than acceptable, for a wide range to select from, will often be found convenient. The formulas are from sources of the highest authority in the veterinary art, from such writers as Youatt, Spooner, Clater, Lebas, Blaine, Jeckyll, White, Moiroud, Vatel, Hinds, Downing, Dadd, Tucker, Stewart, Rawlings, Eckel, Bourgelat, Strauss, and others. Their (400) Recipes are scientific and thoroughly worthy of confidence.

Let all understand, however, that, as with men, so with horses and cattle, "dosing and drugging" carelessly or overmuch are greatly injurious, and, therefore, should be avoided. Always watch carefully and be prepared to *act* wisely; but be sure to give nature a fair chance to work out a cure, if possible.

"An ounce of prevention is worth a pound of cure." Take care that animals are protected from exposure to undue extremes of weather; of activity and inactivity: see that they have clean and well ventilated stables, and are carefully groomed and fed, and they will but seldom get sick.

The Explanatory Index in the present improved edition has been made very full, and will point the reader to many remedies always accessible, which, with good judgment, may readily be made available in the *home* treatment of diseases.

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Wash for Sores. Sponge off with Carbolic Soap and water. See Honey, 10; Iron, 10; Lime-Water, 10; Mallow, 11; Muriate of Ammonia, 11; Nitrate of Silver, 12; Salt, 14; Sulphuric Acid, 15; Tar-Water, 15.

Wash for Vermin on Animals. Tobacco Water, 15.

Weak Stomach. Peruvian Bark, 5; Chamomile, 6; Capsicum, 6; Gentian, 9; Oak Bark, 12; Quassia, 13; Soda, 14; Cordial Balls, 20, 21.

Wind, to expel from stomach. Aniseed, 4; Bay-Berries, 5; Caraway Seed, 6; Cinnamon, 6; Cloves, 7; Fennel, 9; Ginger, 9; Lavender, 10; Mint, 11. See Windy Colic, Drenches Nos. 14, 15, 16, page 18.

Worm Drench for Cattle, page 38.

Worms. A very light sprinkle of Fine-Cut Smoking Tobacco on feed, for every other day, a brief period, will bring relief often with Botworms, etc. See Fever, 9; Rue, 14; Tansy, 15; Turpentine, 16; Wormwood, 16; Vermifuge, 20; Worm Powders, 20.

Wounds. See Aloes, 3; Alum, 4; Arnica, 4 Ammonia, 4; Catechu, 6; Creosote, 8; Nitrate of Silver, 12; Nitre, 12; Oak Bark, 12 Oil Ex., 12; Tar, 15. Dust ashes of burnt Copperas (burn on hot shovel) to stop bleeding.

Yellows (*Jaundice*). Balls, page 27.

Yellows in Cattle. Drenches, page 37.

RECIPES.

Bots. These worms are the product of the *gad-fly*, which deposits its eggs usually on the forelegs of the horse; by the animal they are licked into the mouth and swallowed, and in due time are hatched in the stomach, whence they may make their way out by eating through the walls of his stomach, and thus destroy the horse. Such is the popular belief. Some of the best writers on the horse, however, deny the theory, and say that the worms are harmless, doing the horse no special injury, and only eat through his vitals after death.

That horses suffer intensely, and manifest it by great uneasiness, when attacked by the bots, we are quite ready to testify. The animal will nip at his sides and manifest much restlessness. The malady will be indicated by the presence, on the inner surface of the upper lip, of red pimples.

A sure remedy is said to be found in a quart of warm water, well sweetened with molasses or sugar, to which put in 2 drams of laudanum and 2 ounces of sulphuric ether. Pour down the horse from a strong junk bottle. If necessary, repeat an hour later, and in either case, follow an hour or so afterwards by giving a pint of linseed oil.

Another reliable remedy. — Put into a half gallon of new milk a quart of molasses; mix thoroughly, and give the horse; following this, give, twenty minutes later, a half gallon of blood-warm sage tea; a half hour later give a pint to a quart of neat's-foot, linseed, or lard oil, as may be convenient. In some cases, two or three drenches of strong sage tea, well sweetened, will give entire relief.

As a preventive, horses have often been relieved from these and other worms by a *light sprinkling* of *fine-cut* smoking tobacco mixed into their feed, oats or shorts, once every other day for a week.

Distemper. Is characterized by a sharp inflammatory swelling near the hinge of the jaw, which, when it comes to a head, is attended with large discharges. It will break itself, but it is well to hasten the discharge by applying a poultice, or fomentation. See *Drawing Poultices*, page 34. — Take special pains to keep up the strength of the horse by a liberal diet of scalded oats or mashes. See page 25. — Protect well from the weather until the animal is thoroughly rid of the disease, which is never taken a second time.

Founder. May be an acute rheumatism, or inflammatory fever of the body, as in chest founder, but is more commonly a lameness caused by an internal inflammation and soreness in the feet or limbs, or of both limbs and feet of the horse. These may be produced by means as various almost as inflict the pains and penalties of rheumatism upon the human family, therefore be careful to see that your horses are not neglected, over-fed, or over-driven. The disease is more commonly induced by watering the horse too freely, when overheated by driving; by getting suddenly chilled after hard work, or by a surfeit or excess in eating. (See *Colchicum*, page 7.) *Salt*, in large doses, is purgative, and Robert Stewart, in his American Horse Book, advises a drench of hot salt and water, to be followed by bathing the legs freely with the same. Dissolve four to six ounces of salt in hot water, and pour down the horse; bathe the legs also. See *Corrosive Sublimate*, page 7, for liniment, which should be used and heated in as directed, on feet and legs until relief is given. Feed lightly on warm bran mash or gruel, and in cold weather have a blanket on. In season, turn out to grass, if severely affected, on marshy or wet ground.

Vinegar Liniment. This is cheap and valuable for strains, swelled legs, bruises, etc., if thoroughly rubbed upon the parts affected. To a gallon of strong cider vinegar add a pound of finely pulverized saltpetre, or in these proportions for any quantity likely to be needed. It should stand and digest for a day or two before being used, and, therefore, should always be kept on hand.

Lampass, or Lampers. A swelling of the roof of the mouth immediately behind the fore-teeth, usually in colts and young horses. Never adopt the old, torturing process of burning out with a hot iron, but rather lance with a sharp-pointed penknife, and then apply a mild caustic made of burnt alum, mixed with honey, until healing has taken place, and the swelling has abated.

ARTICLES AND FACTS

REQUIRED IN THE PREPARATION AND USE OF

MEDICINES FOR HORSES, CATTLE, ETC*

[Explanation of Abbreviations. — Dr. for dram, gr. for grain, and oz. for ounce.]

Allspice. (*Pimento.*) — A useful stimulant and carminative; used in cordial balls and drinks, and to correct the action of purgatives. Dose for horses, 2 to 4 dr.; cattle, ½ oz. to 1 oz. Dose of the Tincture, 4 oz., in gripes.

Aloes. — The most valuable purgative for the horse, but not to be depended on for cattle and sheep. A horse requires from 4 to 8 dr. of Barbadoes aloes, from 5 to 9 dr. of Socotrine, and from 6 to 10 of Cape. Mr. Youatt says 3 dr. of Barbadoes are equal to 4 of Cape. Mr. Morton considers a mixture of equal parts of Cape and Barbadoes aloes to be quite as efficacious as the latter alone. But the fine gourd Barbadoes aloes are the most certain in their operation. If the animal be prepared by previous mashes, 5 dr. are generally, and 6 dr. almost always, sufficient. Mr. Blaine recommends 2 dr. every 6 hours till 8 dr. have been taken, as a nauseant and purgative: but Mr. Youatt strongly disapproves of this plan, particularly in inflammation of the lungs. Aloes require from 18 to 36 hours to produce their effect, during which time the horse should not be ridden far or fast. Though not to be depended on for cattle, 4 to 6 dr. are sometimes added to the purgative salts. Large doses (in some cases sufficient to destroy life) have been given to sheep without purging. Small dogs require from 15 to 30 gr.; medium-sized ones, a dr.; some larger ones require 2 dr., or more. Hogs can bear but a few grains. Externally, in the form of tincture, aloes is used as a stimulating application to wounds.

Alterative Medicines. — The term *alterative* is applied to medicines which, without any sensible operation, or with a laxative or diuretic operation so gradual as not to interfere with the usual work or diet, produce a favorable change in the system, and, in common language, "purify the blood." Alteratives are given in skin diseases, for mange, surfeit, hide-bound, and to make the skin fine; for swelled legs, grease, foul humors, etc.; probably daily, or every other day, for a short period.

Alum. — Astringent and styptic. Given in doses of 2 to 4 dr. to horses in diabetes and diarrhea; but Bourgelat says that its too frequent use induces a phthisical condition. A dose of alum whey, consisting of 2 dr. of the powder in a pint of hot milk, may be given after excessive purging. Cattle require from 2 to 6 or 8 dr. in diabetes and red water; and from 2 to 4 oz. are given to cows to dry their milk. To calves and lambs it is given in dr. doses, in warm milk, for diarrhea, etc. Dogs, 10 to 15 gr. Externally, it is applied to cracked and greasy heels, joint wounds, sore mouths, inflammation of the eye, chronic discharges from the nostrils, and to arrest

*For Description and Properties of Plants, see Materia Medica, pages 789–935.

bleeding from wounds. *Burnt* alum is more powerful, and is used as a mild caustic, mixed with honey, to fungous growths, sore mouths, etc.

Ammonia, Carbonate or Sesquicarbonate of. (*Volatile Salts.*) — Stimulant and antacid. Dose, 1 dr. to 2 dr. [MOIROUD says from 2 to 8 dr.] to horses in tympanitis, and the last stage of pneumonia. To cattle, in hoven or distension from the fermentation of green food, 1 to 4 dr. [MOIROUD says to 12 dr.] The solution of carbonate of ammonia has the same properties as the Spirit of Hartshorn.

Ammonia, Liquid. — Water of ammonia is more pungent and stimulant than the carbonate, and is used for the same purposes, particularly in tympanitis and hoven, largely diluted with water or some aromatic infusion; but it is chiefly used externally in stimulating liniments: also both internally and outwardly as an antidote to the bite of poisonous insects and snakes. The dose of common water of ammonia may be from 2 to 6 dr.; or for cattle, to 2 oz.

Angelica. — The root, in powder or infusion, is a warm tonic. Dose, ½ oz. to 2 oz.

Aniseed. — This warm seed is used as a cordial, carminative, and pectoral. Dose for the horse, ½ oz. to 1 oz.; or ½ dr. of the essential oil. The latter is often added to purgatives to prevent griping. Cattle take 1 to 2 oz. of the powdered seeds. The oil is said to be poisonous to pigeons.

Anodynes. — Medicines which alleviate pain. Opium is chiefly employed for this purpose.

Antimony, Crude. (*Black* [*or sesqui-*] *Sulphuret of Antimony.*) — Diaphoretic and alterative. The levigated (prepared antimony) is to be preferred. Given to horses in doses of from 2 to 6 dr., with nitre and sulphur, in surfeit, hide-bound, and other skin diseases; and to improve the coat. Mr. YOUATT says the dose should not exceed 4 dr. For cattle, the dose is sometimes increased to 2 or 3 oz. Dogs take from 10 to 30 gr. Hogs, a dram or more, daily.

Antimony. Tartarized. (*Emetic Tartar.*) — Diaphoretic, expectorant, and reduces arterial action. It is also regarded as diuretic and febrifuge. Dose, ½ dr. to 1½ dr. in gruel, 3 times a day, in fevers, in inflammation of the lungs, and catarrhal affections. To destroy worms, 2 dr. may be given with powdered tin, or some other mechanical vermifuge, fasting, and followed by aloes; or 1 dr. for 6 mornings, followed on the 7th by a dose of physic. Mr. WHITE says he has not seen any good effect from it as a vermifuge. Cattle require from ½ dr. to 1 dr. Sheep from 10 to 20 gr. To swine and dogs it is emetic: the former require from 2 to 5 gr.; the latter, from 1 to 3 gr. Externally, it produces an eruption on the skin. Formed into an ointment with lard, it has been rubbed on externally in chest affections, but is dangerously irritant.

Anti-periodics. — Remedies against those diseases which return at regular intervals, as agues.

Anti-septics. — Remedies which counteract putrefaction.

Anti-spasmodics. — Medicines which relieve spasm, as opium, ether, camphor, ammonia, ardent spirits, etc.

Arnica. — Nervine, sedative, and diaphoretic. 40 to 60 gr. of the powdered plant (the flowers in preference) have been given twice a day for paralysis, amaurosis, rheumatism, blows or falls, etc. A decoction may be used outwardly as a fomentation to bruises, wounds, etc.

Assafetida. — Stimulant, anti-spasmodic, and expectorant. It is prescribed in nervous affections and chronic coughs; also in farcy and worms; and to increase the appetite and digestion. The dose is ½ dr. to 2 dr.; but, according to MOIROUD, may be carried to 2 oz. for the horse, and 2 or 3 oz. for horned cattle. Externally, it is applied to indolent tumors, etc.

Astringents — Medicines which produce a more obvious and decided constric-

tion of the muscular fibres than the simple tonics. Used in scours, diarrhea, dysentery, diabetes, etc.

Balls and Ball Masses. — The roots, seeds, and other dry substances are to be reduced to powder; and it is of importance that the aromatic seeds, especially, should have been recently powdered. The drugs should be of good quality, and when rolled in soft paper are called *balls*.

[*Mode of Administering Balls.* The horse should be backed into the stall, the tongue drawn gently out with the left hand on the off side of the mouth, and then fixed by pressing the fingers against the side of the lower jaw. The ball being now taken between the tips of the fingers of the right hand, must be passed rapidly up the mouth, as near the palate as possible, until it reach the root of the tongue; it must then be delivered with a slight jerk, so that the hand being immediately withdrawn, and the tongue liberated, the ball may be forced through the pharynx into the œsophagus. A slight tap under the chin may then be given, or a draught of water to assist in carrying it down.]

Balsams. — Natural balsams appear to act on the mucous membrane generally; but are chiefly given as diuretics and expectorants.

Bark, Peruvian. — Tonic, astringent, anti-septic, and anti-periodic. Dose for a horse, 6 or 8 dr. [to 2 or 3 oz. — MOIROUD] in diabetes, general weakness, a tendency to gangrene, etc. To small animals, 1 or 2 dr.

Barley. — The decoction (of Scotch or pearled barley in preference) is given as an emollient, demulcent, or diluent drink in inflammatory diseases; more frequently as a vehicle for more active remedies.

Bay Berries. — Stomachic and carminative. An ingredient in diapente, but rarely given alone. Dose of the powdered berries, ½ oz., or of the oil of bays, ½ dr. to a dr. The leaves are used in fomentations.

Belladonna. (*Deadly Nightshade.*) — Narcotic and sedative. Dose, of the extract from 1 to 4 dr., in diseases where there is undue action of the nervous and vascular systems. M. MOIROUD directs from 6 to 8 dr. of the powder. For dogs, from 2 to 8 gr. of the powder. The extract is also applied to the eye, to dilate the pupil.

Bitter-Sweet. (*Dulcamara.*) — Diuretic, narcotic, and alterative. Dose, ½ oz. in decoction.

Bleeding.—The quantity of blood usually abstracted from the horse is from 2 to 4, or, in some cases, 6 to 8 quarts, or until faintness is produced. From cattle, from 2 to 6 quarts, or till faint. Sheep, 16 oz. Lambs, 4 oz. Dogs in the proportion of 1 oz. for every 3 pounds weight. [Or 1 or 2 oz. from a very small dog; 7 or 8 oz. from a larger one. — Mr. YOUATT.]

Blistering Fly. — See Cantharides. Blisters are applied in the form of ointments, or liniments, to excite superficial inflammation, followed by vesication; and are intended to draw away inflammatory action from more deeply seated but not distant parts. Also, to excite the action of the absorbents, and to promote suppuration.

Borax. — Detergent. Applied to sore mouths, mixed with honey. It is supposed to be a uterine stimulant.

Box Leaves. — They are given, chopped with hay, as a vermifuge. They are also used as a preventive of hydrophobia. The rasped wood is considered sudorific, and prescribed in rheumatic and skin diseases, and even in farcy and glanders.

Bran. — Mucilaginous, and slightly laxative: given in mashes.

Buchu. — Diuretic and tonic, very valuable in all diseases of the urinary organs; used in infusion from the leaves.

Calumba. — Tonic. Dose of the powdered root, from 2 to 4 dr.

Camphor. — Is reputed anti-spasmodic, narcotic, and diuretic. It assists the action of diaphoretics; is frequently added to fever medicines to allay irritation;

and is used as an anti-septic in malignant epidemics, etc. Mr. SPOONER combines it with opium in cases of lock-jaw. Dose, 1 or 2 dr. MOIROUD says 2 to 12 dr Its use is questionable where active inflammation exists. Externally it is used as a discutient and anodyne, in embrocations, eye-waters, etc. Its vapors are thought to act favorably on old coughs.

Capsicum. — Cayenne pepper. A hot stimulant. From 10 to 20 gr. may be given in weakness of the stomach, and from 20 to 60 grs. in flatulent colic, or in severe colds. It is also used externally as a stimulant.

Caraway Seeds. — Carminative and stomachic. Dose, ½ oz. to 1 oz.; or double that quantity to cattle. Used in cordial balls and drenches; and often added to purgatives, to prevent griping. The essential oil is used for the same purposes, in doses of 10 to 30 drops. Mr. YOUATT considers caraway and ginger the only cordials required for the horse.

Cardamom Seeds. — Carminative. Dose, 1 to 4 dr.

Carminatives are stimulants which, by their rapid impression on the stomach, etc., occasion the expulsion of wind, and relief of pain.

Carrots. — Restorative and alterative. Given to horses as food after severe illnesses: and in coughs, grease, foul humors, etc. Externally in poultices.

Cassia. — A warm stimulant. Dose, 1 to 2 dr.

Castor. — Anti-spasmodic. ½ oz. has been given in locked jaw. But rarely used.

Castor Oil. — Laxative. It is uncertain as a purgative for the horse, and sometimes produces much irritation in large doses. ½ pint may be given every six hours till it operates, with watery solution of aloes. Cattle require a pound, or pint; calves, 2 to 4 oz.; sheep and swine, 1 to 2 oz.; dogs, 2 to 4 dr., with syrup of buckthorn. The seeds are more active: from 2 to 6 are sometimes given to swine and dogs, crushed and mixed with food; but from their effects on man, their use would seem to require caution.

Catechu. (*Terra Japonica.*) — Astringent. Dose for a horse, in diabetes, diarrhea, etc., 1 or 2 dr. [YOUATT], or to 1 oz. [BLAINE]; cattle, 2 to 4 dr. in gruel. [It is usually combined with chalk, opium, and gum. — YOUATT.] Dogs require from 10 to 40 gr. In India it is said to be given in doses of 2 oz., for the purpose of taming vicious horses. The tincture is useful in promoting the healing of wounds.

Cathartics. — Purgatives (which see).

Caustics. — Solid or liquid substances which burn or destroy the part to which they are applied. The *actual cautery* consists in burning with an iron heated to whiteness.

Chalk. — Antacid and astringent. Horses require from ½ oz. to 1 oz.; cattle, 1 or 2 oz.; sheep and swine, 1 dr.; dogs, 10 to 20 gr. It is often combined with catechu. Externally it is sprinkled on sores.

Chamomile. — A mild tonic, stomachic, and febrifuge. Dose, 1 to 4 dr. of the powdered flowers, or an infusion of ½ oz. of the flowers in a quart of water, in debility of the stomach, flatulence, and in the last stage of fevers, and influenza. It is the first tonic that should be used in convalescence. Ginger, or some other aromatic, is usually joined with it.

Charcoal. — Anti-septic. Used as an application to foul ulcers, either sprinkled on them or mixed with poultices.

Chloride of Zinc. — It is a powerful caustic. A diluted solution is used as a disinfectant.

Chloroform. — Used to produce insensibility to pain in the same manner as ether; and as a remedy for tetanus.

Cinnamon. — Stimulant and carminative. Dose, 2 dr.; but cassia is usually substituted for it.

Cloves.—A hot stimulant, cordial, and carminative. Dose, 1 to 3 dr. in powder, or from 10 to 20 drops of the oil; the latter is a frequent adjunct to purging balls, to prevent griping. Cloves are also an ingredient in masticatories.

Clysters.—These are injected into the rectum by a proper syringe, or a bladder and a pipe, either to unload the bowels, abate inflammation and pain, or to act on the system generally, when medicines cannot be given by the mouth.

Colchicum.—Poisonous to most animals. A diuretic and narcotic purgative, chiefly used in rheumatic affections. Dr. LEMANN found it useful in constitutional ophthalmia, and in pneumonia, in doses of a dr., twice a day, with nitre. According to M. MOIROUD, the dose for larger animals is from 1 to 2 dr. For smaller, 6 to 8 gr.

Colic.—In colic the attacks come on periodically; or, in other words, the animal feels in great pain, and soon again gets easy. The pain is often relieved by rubbing and motion. Not so in inflammation, when the pain and distress continue, and by motion are increased.

Colocynth.—Bitter apple. It has little effect on the horse. It is purgative to dogs, and in large doses poisonous.

Condition Medicines are usually alteratives, given to promote the action of the skin and kidneys; to give a smooth coat, etc.

Copper, Sulphate of. *Blue Vitriol.*—Tonic and styptic. In doses of ½ dr. gradually increased to 2 dr. or more daily it is given in diabetes, farcy, &c. Small doses may be given in balls with gentian and ginger; larger doses in gruel. It has been thought useful in glanders; but Mr. YOUATT says it is only proper in nasal discharges without fever. Dose for cattle, 1 to 2 dr. Sheep 20 to 40 gr. Rabbits (in sniffles), 1 or 2 gr. twice a day. Externally the solution is used for the foot-rot of sheep; and as a cleansing wash for foul ulcers in horses and cattle. Used also in the solid state to destroy proud flesh.

Cordials.—Warm stimulating medicines, such as spices and the aromatic seeds, fermented liquors and spirits, &c., which temporarily restore exhausted strength, revive the spirits, and rouse the system generally. The best modern practitioners condemn their indiscriminate employment, as the source of much mischief.

Coriander Seeds.—A mild aromatic stimulant and carminative, used in cordial balls and drinks. Dose, ½ oz. to 1 oz.

Corrosive Sublimate.—One of the most virulent poisons. In small doses it is alterative and diuretic. It has been tried in doses of 2 to 5 gr., gradually increased to 10 or 20, in farcy and glanders, but rarely with lasting benefit. Externally it is used as a powerful caustic. A dilute solution is employed as a wash for scab and lice in sheep, but the practice is not free from danger. Applied to wounds in cattle it has proved as fatal a poison as when swallowed. Perhaps the best liniment which can be made for constant use in scratches, grease, thrush, corns, hoof-rot, swelled legs, ring-bone, sprain, big-head and jaw, is that produced by using corrosive sublimate, very finely pulverized, in the proportions of 2 oz. with 2 oz. of camphor gum dissolved in 1 quart of turpentine. Shake thoroughly, and after standing 24 hours, apply outwardly with a small rag mop. When used in hoof or bone affections, *dry in* with a hot iron *near to*, but *not on*, the spot diseased. It is said to cure in all cases named. The antidote for an overdose is white of egg, or milk, or the hydrated sulphuret of iron, with demulcent drinks.

Cream of Tartar.—Cooling, laxative, and diuretic. Seldom given alone, but combined with antimonials, mercurials, or sulphur, as an alterative in skin diseases, and used as an adjunct to aloes in purging balls. Cattle require 2 to 3 oz.; when given in larger doses it should be given in plenty of warm water. Sheep require ½ oz. to 1 oz. Dogs 5 to 20 gr.

Creosote.— Tonic, stimulant, and anti-septic. Dose, 20 to 30 drops daily, in gruel or linseed tea, in glanders. Externally in lotions and ointments, to fistulous wounds, unhealthy ulcers, &c.

Croton Seed and Oil.— Purgative. The oil produces great irritation in the horse. Dose, about 20 drops; 30 drops have proved fatal. The powdered seeds and the meal or ground cake left after expressing the oil, are also used; 3 gr. of the former and 5 of the latter being considered equivalent to 1 dr. of aloes. It operates with less certainty, and produces more debility than aloes, but is sometimes preferred on account of its more speedy action. It is usually given in the form of a ball, 20 or 30 gr. being mixed with one oz. linseed meal. Mr. NORTON gives from 12 to 24 gr. of the seed. Mr. YOUATT prescribes 30 gr. of the powdered seeds in a drink, in tetanus and brain fever, followed by smaller doses (10 gr.) every 6 hours. It will purge rapidly when placed upon the tongue, but is then likely to inflame the mouth. From 10 to 20 gr. are sometimes added to salts in purging drenches for cattle, in extreme cases. One drop of the oil purges a dog freely.

Cummin Seed. — A warm carminative. Dose, from 1 to 4 dr. of the powdered seeds, or from 6 to 20 drops of the oil.

Diaphoretics.— Medicines which promote perspiration.

Digestives. — Mildly stimulating applications, which excite healthy action in indolent ulcers, wounds, &c.

Digitalis. *Foxglove.* — Sedative and diuretic. It reduces the frequency of the pulse and diminishes irritability. It is poisonous to animals generally; 6 gr. will kill a dog. It is asserted, however, that it produces no effect on poultry. The common dose of the powdered leaves for a horse is from 10 to 30 gr. Mr. YOUATT prescribes 60 gr., with emetic tartar and nitre, in inflammation of the chest; but its effect on the pulse must be carefully watched. To cattle, ½ dr. to 1 dr. Sheep, 5 to 15 gr. Dogs, 1 to 2 gr. An infusion of the leaves is applied to inflamed eyes.

Diuretics.— Medicines which increase the flow of urine. Some of them, juniper, capivi, squills, broom, &c., appear to carry off water only; while the alkaline salts remove solid matters also, and thus purify the blood. Diuretics are employed to lessen the quantity of the circulating fluid in fevers and inflammations. The legs of many horses cannot be kept fine, nor the grease be subdued without the use of diuretics. Plenty of water should be allowed with them. But their too frequent use is injurious.

Dog-grass.— It is emetic to dogs.

Drenches are those liquid medicines which must be administered by a horn, bottle, or funnel. But the best vessel for this use is a strong junk-bottle, out of which the drench may run into the throat. See "Balls," etc., for best mode of placing the animal.

Drinks, properly speaking, are liquids which the horse will take willingly.

Eggs. — Nutritive and demulcent. Sometimes given in diarrhea. They constitute the best antidote to poisoning by corrosive sublimate.

Elder. — An infusion of the flowers is given in catarrhal complaints. The leaves boiled with lard form an emollient ointment, which is a common application to sore udders. The fresh leaves of the dwarf elder are given with some success as a deobstruent and aperient, in swelled legs, dropsy, and farcy.

Elecampane. — The root is reputed stimulant, diaphoretic, diuretic, stomachic, and expectorant. Dose, 4 to 8 dr. in chronic catarrh, dropsical swellings, indigestion, etc.

Emetics. — Medicines which excite vomiting. It is scarcely possible to produce this effect in herbivorous animals.

Emetic Tartar. — See Antimony, Tartarized.

Emollients. — Medicines which soften and relax the tissues of the organs.

Epizootic is the cattle term for "epidemic."

Epsom Salt. — A cooling laxative. It is not to be depended on as a purgative for the horse; but in doses of 4 or 5 oz., in a large quantity of water, repeated three times a day, it is useful as a laxative and diuretic in inflammatory diseases. Cattle require from 12 to 20 oz., with ginger or any of the warm seeds. It is sometimes rendered more active by aloes or gamboge. Calves require from 1 to 2 oz., according to their age and strength. Sheep, ½ oz. to 2 oz. Dogs, from 1 to 3 dr. wrapped in tissue paper.

Ergot of Rye. — It promotes parturition. Dose for a mare, 2 or 3 dr. A cow, 2 dr., repeated at intervals of half an hour. An ewe, 20 to 40 gr. Bitch, 5 to 10 gr. [Mr. SPOONER says from 2 to 4 gr.], or an infusion of a scruple given at three times, at intervals of half an hour.

Errhines. — Remedies which excite a discharge from the nostrils.

Ether. — A diffusible stimulant and anti-spasmodic; used chiefly in colic. Dose, ½ oz. to ¾ oz.; cattle, ½ oz. to 1 oz.; dogs, 7 to 14 drops. It is used outwardly in cooling lotions and eye-waters. The vapor, inhaled by means of a proper apparatus, produces insensibility to pain; but some of the experiments with this agent have proved most unfortunate.

Fennel Seeds. — A weak carminative and diuretic. Dose, ½ oz. to 2 oz.

Fern. — Powdered male fern is given in doses of 6 dr., followed by a mercurial purgative, for expelling worms. M. MOIROUD carries the dose to 4 oz.; or 5 or 6 dr. for smaller animals.

Fœnugreek Seeds. — Emollient, nutritive, and stomachic. Dose, 1 oz. daily, to promote condition in horses, and in diseases of the chest. It is also added to the food of swine, to promote their fattening. Used also externally in fomentations.

Forge Water. — The water of the blacksmith's forge is sometimes given as a tonic, or applied as a wash to ulcerated and cankered mouth.

Foxglove. — See Digitalis.

Gentian Root. — Tonic and stomachic; in debility, after severe illness, etc. Dose for a horse, 2, 3, or 4 dr. of the powder; or from ½ dr. to 1 dr. of the extract. Cattle, 2 to 4 dr. or more. Sheep, 20 to 60 gr. Generally joined with ginger. An infusion is recommended as a wash to ulcers.

Ginger. — Stimulant and carminative; a general ingredient in cordial and tonic medicines. Dose, 1 to 3 dr., or in flatulent colic, 2 to 6 dr. Cattle, 2 to 6 dr. Calves, 20 to 30 gr. Sheep, 30 to 60 gr. The smaller of the above doses may be added to all aperient medicines. It is also used as a masticatory. Dose of the tincture, ½ oz. to 2 oz.

Gum Arabic. — Emollient and demulcent. Used in inflammatory affections of the bowels, or of the respiratory or urinary organs. Dose, for horses and cattle, 1 to 4 oz., dissolved in water. For smaller animals, from ¼ oz. to 1 oz. It is also used to suspend in water insoluble powders and oils. Gum senegal and gum tragacanth are used for the same purposes. The latter will thicken twenty times as much water as Gum Arabic.

Hartshorn, Spirits of. — See Ammonia. It is chiefly used in stimulating liniments, and for the bites and stings of venomous reptiles and insects. For salt of hartshorn, see Ammonia, Carbonate of.

Heaves. — Feeding prairie hay which contains the resin weed will cure it. Ordinary hay should be wet down with lime water, or with salt water — a handful of salt to a bucket of water.

Hemlock, Spotted. — A narcotic poison. In doses of a dr. of the powdered

leaves, or the extract, gradually increased, it is sometimes given to quiet obstinate coughs. It is also an ingredient in some old remedies for farcy, scirrhous tumors, and cancer. For dogs, from 1 to 4 gr., in coughs and cancerous diseases. A decoction of the herb is used as a fomentation to painful tumors. Water hemlock is a more virulent poison, and often destroys cattle.

Henbane.—Narcotic and sedative. Dose, 15 to 20 gr. of the powder (1 to 2 dr. of the extract) twice or three times a day, to allay arterial action. On dogs it acts as on man. Dose, 3 to 5 gr. German horse dealers are said to give a plump appearance to diseased horses by mixing henbane seeds with their grain.

Honey.—Demulcent, emollient, and slightly laxative. Used in cough medicines, and to make up balls. Horses are fond of it. Externally, it is detergent, and is, perhaps, useful in defending ulcers from the air.

Hops.—Tonic and slightly anodyne, but chiefly used in fomentations.

Horehound.—Sometimes given in coughs; a quart of the decoction, or 1 oz. of the powder.

Horseradish.—Stimulant and diuretic. Said to be useful in dropsical complaints, and in recent epidemics attended with chronic inflammation. The fresh root is rasped and mixed with meal.

Iodine.—Alterative, and promotes absorption. Used externally and internally to reduce glandular swellings, and scirrhous and other tumors. 5 gr. of iodine, or 1½ or 2 dr. of the compound tincture, may be given twice a day in farcy. Cattle take from 5 to 10 gr., and from 1 to 2 dr. of the compound tincture. Dogs, ¼ to 1 gr. twice daily. The compound iodine ointment is used to disperse glandular enlargements. It is rapidly superseding cantharides.

Iron.—The preparations of this metal are tonic, some of them (as the sulphate and muriate) astringent and styptic. The usual doses for a horse are, 2 oz. of iron filings, once or twice a day, with corn, or in a mash; 1 to 3 or 4 dr. of the sulphate; 2 to 6 dr. of the sesquioxide or carbonate, or of rust of iron, or of the powdered scales; 1 to 3 dr. of tartarized iron, and ½ to 1½ dr. of the iodide. Cattle, 2 to 4 dr. of the sulphate in chronic diarrhea. For sheep, a sixth or eighth of the above doses. [M. MOIROUD prescribes much larger doses than the above.] The muriated tincture of iron is prescribed in doses of 2 or 3 dr. for incontinence of urine. The sulphate is sometimes used externally in astringent lotions.

Jimson Seed, from the Jimson Weed (Stramonium or Thorn-apple). For the horse it is a very powerful alterative. It is diuretic, diaphoretic, and cathartic. Should be gathered late in the fall. In chronic founder, distemper, big-head, and impaired digestion it is excellent.

Juniper Berries.—Diuretic and slightly stimulant. Dose for a horse, 1 to 2 oz., or 1 to 2 dr. of the essential oil; for cows, 2 or 3 oz.; sheep, ¼ to ½ oz.

Lard.—Half a pound, with warm water, is laxative and emollient. It is also used to make up balls, and is thought to prevent griping, as well as to preserve their consistence. It forms a common basis for ointments.

Lavender.—The compound spirit is carminative and cordial. Dose, ½ oz. in peppermint water.

Lead, White and Red.—Common ingredients in ointments and plasters. Also sprinkled on sores as desiccatives. They are likewise used for dusting sheep for the fly.

Lime.—Quicklime is sometimes used as a caustic; the powder dusted over foul ulcers, greasy heels, &c.

Lime-Water.—Antacid and tonic. Sometimes given in diabetes, from 2 to 4 quarts. Used also as a wash for sores, and as an injection into the nostrils in glanders and chronic discharges. Mixed with linseed oil, it forms a liniment for burns.

Linseed.— Demulcent and pectoral. A decoction of the seeds is very mucilaginous, and is used in colds, sore throats, and internal inflammations; also to counteract the effects of corrosive and irritant poisons, and as a vehicle for more active medicines. Linseed meal is used for poultices. Linseed oil is laxative. Dose for a horse, a pint or a pint and a half; for cattle, 1 or 2 pints; sheep, 2 or 3 oz.

Liquorice.— Demulcent and pectoral, in coughs, &c. Dose, ½ oz. to 2 oz. of the powdered root; or ½ oz. of the foreign extract (Spanish or Italian juice).

Logwood.— Astringent. 2 or 3 dr. of the extract, or a decoction of 3 or 4 oz. of the wood may be given in diarrhea, &c.

Lotions.— Washes. Liquid applications, with which external parts are bathed.

Magnesia.— Antacid and laxative. From ½ oz. to 3 oz. to horses and cattle, with some warm carminative in flatulent distension. To calves in diarrhea, ½ oz. Either the common or the calcined magnesia may be used.

Mallow.— Demulcent. A handful of the leaves is boiled in a quart of water. More frequently used as a lavement. The *root* of the *marsh-mallow* is preferred; a decoction of 2 or 4 oz. is given as a drink in both coughs and internal inflammations, and used as a clyster, and as a fomentation.

Malt.— Nutritive, pectoral, and alterative. It is given in the form of mashes, in chest affections, when no inflammation is present, and in grease, farcy, and mange.

Manna.— Slightly laxative and pectoral. Dose, 2 oz. with honey, or dissolved in water, in inflammatory disease and chronic coughs.

May-Apple Root.— See what is said of it in the "Vegetable Materia Medica." Boil a strong decoction of it down to a thick syrup, and then stir in, while boiling, as much lard or bacon as you have syrup, and you will have an excellent liniment and sure remedy, if slow, in the second stage, when suppurating, of fistula and poll-evil; excellent in ulcers.

Milk. — Sometimes given in quantities of 1 to 3 quarts, in acute inflammations, coughs, and all internal irritations, especially those occasioned by acrid and corrosive poisons. It is a convenient vehicle for administering medicines to the dog or cat.

Mint, and Peppermint. — Carminative, cordial, and sudorific. A strong infusion of the plant, or the distilled water, may be given in flatulent colics. Dose, 1 or 2 pints; used chiefly as vehicles for more active remedies. Dose of the oil of peppermint, 20 to 30 drops, or to 60 drops of oil of spearmint. A few drops of the oil are added to purgative medicines, to prevent griping. The other mints have similar properties.

Mullein. — An infusion of the flowers is given as a demulcent for the same purposes as linseed tea. A decoction of the leaves is used in emollient fomentations and cataplasms.

Muriate of Ammonia. (*Sal Ammoniac.*) — Formerly used in influenza or epidemic catarrh. It is said also to have proved useful in farcy, and perhaps deserves trial in other chronic diseases. It renders the blood more fluid. Its use requires caution. 2 oz. produced inflammation of the mucous membrane of a horse; 2 dr. killed a dog, and ½ dr. a rabbit. M. MOIROUD states the dose to be from 2 to 8 dr. for horses and cattle, and for small animals from a scruple to a dr., largely diluted. Externally it is a frequent ingredient in discutient lotions to splints, old strains, bruises, indolent tumors, etc., in horses and cattle. It is also employed as an embrocation to sore teats.

Muriatic (or **Hydrochloric**) **Acid.** (*Spirit of Salt.*) — Tonic and anti-septic; but principally used to dissolve calcareous concretions in the bladder. It has been used in the pestilent epidemics of cattle. Dose, for a horse, 1½ to 2 or 3 dr. in plenty of water, twice a day. Externally as a caustic, strongly recommended by YOUATT.

Mustard. — Stimulant; but little used as an internal remedy. Flour of mustard, with or without vinegar, is applied externally as a rubefacient, to relieve internal inflammation.

Myrrh. — Tonic, expectorant, anti-septic, and balsamic. From 1 to 3 dr. to a horse, in chronic cough. To cattle, 2 to 4 dr. or more. The tincture is used for ulcers of the mouth in all animals, and to indolent sores.

Nettle Seed is said to be given with the horse's oats, to give a smooth coat, and an appearance of condition and liveliness.

Nitrate of Silver. (*Lunar Caustic.*) — Tonic; but rarely given to animals, except to dogs in cholera, in doses of $\frac{1}{8}$ to $\frac{1}{4}$ of a gr. Externally caustic. It is the best caustic that can be applied to the bites of rabid animals. A weak solution (10 gr. to 1 oz. rain-water) is used to excite sluggish wounds, and to remove opacity from the cornea of the eye.

Nitre. (*Nitre of Potash.*) — Cooling and diuretic. In colds, fevers, and inflammatory complaints of the horse, from 2 to 4 dr. may be given daily, in plenty of water, or linseed tea, till the desired effect is produced. An oz. is often given, but smaller doses repeated are better. Cattle, 2 to 4 dr. [1 oz. in 24 hours for some days. —Moiroud.] Swine and sheep, 30 to 40 gr.; dogs, 4 to 10 gr. A strong solution is applied to gangrenous wounds.

Nitric Acid, Nitrous Acid, or Aquafortis. — Used externally only, as a strong caustic; or largely diluted (2 dr. to a pint of water) as an anti-septic wash to foul ulcers.

Nux Vomica. — Poisonous to all animals. Given in doses of 8 to 10 gr., gradually increased to 30 gr., in paralysis of the horse; but its effect requires to be carefully watched. It has been tried in glanders and farcy, but without much success. In small doses it invigorates the digestive functions. A few grains will destroy a dog. A dram has killed a horse. See Strychnine.

Oak Bark. — Astringent and tonic. Dose, $\frac{1}{2}$ oz. to 2 oz., in powder, or boiled in water, for diarrhea, diabetes, and debility in horses. To cattle, in dysentery, and in red-water, (after purgatives), $\frac{1}{2}$ oz. to 1 oz. The powdered bark and the decoction are applied to unhealthy wounds, etc. In France, a mixture of oak bark, gentian, and chamomile, is used as a substitute for Peruvian bark.

Oil, Fish. — Common whale oil is a good preventive of the fly, and does not injure the wool.

Oils, Essential or Volatile. — The essential oils of peppermint, cloves, aniseed, caraway, etc., possess in a concentrated state the warm carminative properties of the drugs from which they are distilled. They are frequently added to purgative medicines to prevent griping. Oil of juniper is diuretic, in doses of 1 to 3 dr. Oil of origanum is almost exclusively used outwardly in stimulating liniments. Oil of bitter almonds is poisonous.

Oils, Expressed. — Olive, almond, and linseed oils are laxative, demulcent, and emollient. Dose, 3 to 16 oz., or a pint. In the latter dose they are given (especially linseed oil) as a substitute for castor oil: they are harmless, but rather uncertain in their operation. (See Castor Oil.) They are useful in poisoning by acrid and corrosive poisons. Olive oil is used, both inwardly and outwardly, as a remedy for the bites of reptiles and stings of insects. Externally they are used in liniments and ointments. Oil of bays is generally stimulant and anti-spasmodic, but chiefly used outwardly.

Onions. — Stimulant and diuretic. They are said to be useful in colic and gripes Externally used in poultices to promote suppuration.

Opium — Anodyne, anti-spasmodic, sedative, indirectly astringent, and in large doses narcotic or stupefactive, and capable of destroying life. In combination with

ipecacuanha and tartarized antimony it is sudorific. The dose for horses in ordinary cases is from ½ dr. to 1 dr. But in lock-jaw, spasmodic colic, and other urgent cases it may safely be given in doses of 2 dr., and even (according to MOIROUD) to 4 dr. YOUATT states the dose as 1 dr. to 3 dr. In inflammation of the bowels, after bleeding, it is recommended to give 2 dr. at once, and 1 dr. every hour afterwards until it takes effect. To cattle, the dose is from 10 to 40 gr.; or in lock-jaw, &c., 1 dr. Calves, 10 gr. Sheep, 2 to 4 gr. Much larger doses have been given with impunity. Dogs require from ½ gr. to 2 gr., according to size and case.

Origanum.— Wild Marjoram. Stimulant. The essential oil is hot and pungent, and a frequent ingredient in liniments for old strains, and in blisters.

Palm Oil.— Emollient. Used in compounding ointments and liniments, and of late much commended as a basis of aloetic and other balls. It has also been given as a laxative; dose 12 oz. or more.

Pepper, Black, White, and Long.— Warm stimulant cordials. The latter kind is chiefly used in veterinary practice. It must be carefully avoided in inflammatory complaints. Dose for horses and cattle, 2 to 4 dr. For Jamaica Pepper, see Allspice.

Pepper, Cayenne. — The ground pods of some species of capsicum. See Capsicum.

Peppermint.— Carminative. The distilled water and the essential oil are chiefly used.

Physic.— In veterinary practice this term is applied to purgatives. See Physic or Purging Balls, Veterinary Formulary.

Poultices.— Are useful in relieving inflammation and pain.

Pulse.— The pulse of the horse is most easily found upon the under side of the lower jawbone, at the point where the submaxillary artery passes over its edge. The following table, from VATEL, is inserted as a useful remembrancer.

Table of the Number of Pulsations in a Minute in various Animals in their healthy state: — In the horse, 32 to 38 beats (when not excited by nervous or muscular agitation, 50 beats show decided marks of disease, and 70 or 80 beats indicate a serious state of the system); ox or cow, 35 to 42 [42 to 45 — CLATER; 50 to 55 — SPOONER]; ass, 48 to 54; sheep, 70 to 79; goat, 72 to 76; dog, 90 to 100; cat, 110 to 120; rabbit, 120; guinea-pig, 140; duck, 136; hen, 140; heron, 200.

Purgatives. *Cathartics or Laxatives.*— Medicines which more or less strictly promote evacuations from the bowels. Aloes is almost the only purgative for the horse that is at once certain and safe. For cattle, Epsom or Glauber's salt is the most preferable. Aloes, gamboge, or linseed or castor oil, is sometimes combined with them. Sulphur is used when a very strong purgative is not required; yet this demands some caution. See those various articles.

Quassia.— A tonic bitter. Dose, 1 or 2 dr., with a little ginger, in debility of the stomach. Its poisonous effects on insects and small animals suggest caution in its use.

Ragwort. — The herb is said to produce a kind of lethargy or staggers in horses and cattle. Externally it is used as a poultice in quinsy.

Rhododendron. — Supposed to be useful in the rheumatism of cattle. Dose, ½ oz. to 1 oz., boiled in water.

Rhubarb. — Tonic and stomachic. Scarcely laxative in large animals. From ½ oz. to 1 oz. is given in jaundice, to horses and cattle. On dogs it acts as a purgative, but an uncertain one, in doses of ½ dr. to 1 dr.

Rosemary. — A mild stimulant and carminative. The essential oil is chiefly used in warm liniments and ointments; but is sometimes given in doses of ½ dr. to 1 or 2 dr. in colic.

Rosin or Resin.— Diuretic. ½ oz. to 1 oz. may be given daily to horses in their corn for swelled legs. The yellow or amber resin is preferable. Externally it is adhesive.

Rue. — Stimulant, uterine, anti-spasmodic, and vermifuge. It is also supposed to resist contagion and poisons. A decoction or infusion of 2 to 4 oz. of the fresh herb in water or beer is given for worms; as an antidote to the bite of vipers; with diuretics in farcy; with box leaves as a preventive of hydrophobia; and with camphor and opium in locked-jaw. The bruised leaves are put into horses' ears for the staggers. Externally rue is used in fomentations as a stimulant, anti-septic, and discutient.

Saffron. — Cordial, anti-spasmodic, and uterine; but too weak for veterinary use.

Sage. — Stimulant and tonic. In habitual relaxation of the bowels. The powder may be given in a ball, or the herb infused. The infusion is used as a mouth-wash.

Sago. — Nutritive and demulcent. Used in the form of gruel.

Salt, Common, or Culinary. — In small doses it is tonic, digestive, and alterative; in large doses purgative and vermifuge. As a digestive, 1 oz. may be sprinkled on the horse's corn. As a purgative, or to expel worms, the dose may be from 4 to 6 oz. It is also a common ingredient in laxative clysters. For cattle an oz. or more may be sprinkled on the hay, to assist digestion; as a purgative, 4 to 8 oz. may be given, but it is not suitable in inflammatory or febrile diseases. Sheep require 2 oz. as a purgative; or smaller doses daily as a preventive of the rot. To dogs a tea-spoonful or one and a half will act as an emetic; smaller doses as a vermifuge. Half a tea-spoonful of a solution of salt, as strong as it can be made, is given to poultry as an emetic in roup. Externally, salt dissolved in water is used as a discutient, as a stimulant to old strains, and as a collyrium in chronic ophthalmy.

Scutellaria. (*Skull-cap.*) — Mr. YOUATT and others regard this plant as a preventive of hydrophobia. Dose, 40 gr. daily, gradually increased.

Serpentary. — Stimulant, tonic, diaphoretic, and anti-septic. It is also supposed to resist the effects of the bites of serpents, etc. Dose, from ½ to 1 oz. or more; but rarely used.

Setons. — These consist of cord, tape, or a mixture of horse-hair and hemp twisted together; they are inserted through a portion of the skin to excite irritation and discharge. Mr. MORTON uses cotton cord soaked in a cantharidal liquid.

Snake Root is a stimulating expectorant and diuretic. Is valuable in hysteria and in disturbances of the nervous system; administered as an infusion.

Soap. — Antacid and diuretic. Dose, ½ oz. to 2 oz.

Soda. — Prepared natron, carbonate, or subcarbonate of soda. The common washing soda is generally sufficiently pure. Antacid and diuretic. Dose, 2 to 4 dr. It is sometimes added to aloes as a corrective, and to tonics in weakness of the stomach. The bicarbonate of soda is milder, and may be given in larger doses.

Soot. — Some French veterinarians prescribe from 2 to 3 oz. of soot as a vermifuge. Also used externally in mange, etc. We presume *wood*-soot is intended.

Spermaceti. — Demulcent and pectoral. Dose, ½ oz. to horses in cough; and to cows, after calving. Externally emollient, in ointments.

Spider's Web. — Externally, styptic. Internally, has been given to dogs in convulsive fits, in ½-grain doses.

Spirit of Hartshorn. — This ammoniacal liquor is stimulant, antacid, and anti-spasmodic. Dose, ½ oz. But more frequently used in stimulating liniments, and as an application to the bites and stings of venomous reptiles and insects.

Spirits, Ardent. — Brandy, gin, and rum are given as stimulants and anti-spasmodics, especially in colic. Dose, from 2 to 4 or 5 oz. with warm water. Rectified

spirits of wine may be given in the same way, in smaller doses (1 to 2 oz.); but is more commonly employed for making tinctures; and externally in lotions.

Spirits of Nitre, Sweet. (*Spirit of Nitric Æther.*) — Diuretic, diaphoretic, and anti-spasmodic. Dose for horses, in fever, ½ oz. 3 times a day. In colic, from ½ oz. to 2 oz. Cattle, ½ oz. to 1 oz. in low fevers. Sheep, 1 dr. Dog, from 10 to 20 drops.

Squill. — A stimulating expectorant. Dose for a horse, 1 dr.; for cattle, 1½ to 2 dr. It is also applied in frictions to the abdomen. MOIROUD has seen it remove ascites.

Starch. — Demulcent. Chiefly used in clysters, but sometimes also in drinks. Dose, 1 to 2 oz., rubbed smooth with a little cold water, and then boiled in 3 or 4 pints of water. It is occasionally used in fomentations.

Stimulants. — Diffusible stimulants are those which produce a sudden and temporary excitement of the circulation and of the nervous system.

Stomachics. — Medicines which invigorate the stomach and promote digestion.

Stoppings. — Compositions employed to keep the feet moist and supple. The term is also applied to mechanical plugs for the feet when they are dry and diseased, as cow-dung, clay, tar, etc.

Strychnia. — The active principle of nux vomica: chiefly used in paralysis. Dose, 1 to 3 gr.; to be very cautiously increased if necessary: 15 gr. have proved fatal. Dose for the dog, 1-16th to 1-8th of a grain.

Styptics. — Astringent applications employed locally to stop bleeding.

Sulphur, or Brimstone. — It is in 3 forms — roll brimstone, flowers of sulphur, and black brimstone or sulphur vivum. The flowers are generally used. The black is very impure, and sometimes contains arsenic. Sulphur is laxative, alterative, and pectoral. Dose to horses, as an alterative in skin diseases, grease, want of condition, &c., 1 oz. As a laxative, 4 or 5 oz., but it is rarely employed with this view, and very large doses are not always safe. To cattle, as a laxative, 6 or 8 oz. Sheep, 2 or 3 oz. Dogs, 1 dr. in milk. Swine, 2 dr. It is used outwardly in ointments, for mange in all animals. As an alterative it is usually combined with antimonials and nitre.

Sulphuric Acid. — Poisonous. The strong acid (*oil of vitriol*) is used as a powerful caustic. It is also used in ointments, or mixed with tar to form an external application. In small doses, about 1 to 2 dr., plentifully diluted; it is rarely given as a tonic. The diluted acid (1 oz. to a pint) is used as a lotion in grease, foul ulcers, &c.

Tannin (or Tannic Acid). — The astringent principle of nutgalls. A powerful astringent in diarrhea, &c. Dose, 5 to 10 gr. Catechu is more generally used.

Tansy. — Tonic and vermifuge. Externally in fomentations.

Tar. — Internally, in old coughs, from 2 to 4 dr. Externally it is cleansing and gently stimulating. It is particularly useful in thrushes and all diseases and wounds of the feet both of horses and cattle, to punctured wounds, and for the cure of mange and other skin diseases. Mixed with fish oil, it is applied with a brush to hard, brittle feet. Tar water is also given in chronic coughs. Oil of spirit of tar is used in mange ointments, and as a dressing for sheep. The latter requires some caution; sheep have been killed by it.

Tartar Emetic. — See Antimony, Tartarized.

Tea. — Tonic, in simple indigestion, or when connected with staggers. Dose, 4 to 6 dr., infused in 3 or 4 pints of water.

Tobacco. — An acro-narcotic poison. In small doses, diuretic and emetic. Principally used as a wash for the mange, and to destroy lice and fly in sheep. But it is not altogether safe, as it is apt to be absorbed. It vomits the dog, pig, and cat. But there are safer emetics. Herbivorous animals are less rapidly affected by it.

but instances of its having proved fatal to them are recorded. In veterinary practice the use of it internally should be avoided, except in distemper, farcy, and glanders. The poisonous nature of these diseases must necessarily be destroyed by introducing another poison into the system. In some parts of France jockeys are said to stupefy vicious horses for sale by tobacco diffused in spirits.

Tonics.— Medicines which give tone to the fibres, and invigorate the system when relaxed and debilitated. The principal tonics used in veterinary medicines are, gentian, Peruvian bark, chamomile, and other vegetable bitters and astringents; and the preparations of iron, copper, arsenic, zinc, &c. The over free use of them, particularly when fever and inflammation are present, is a frequent source of mischief.

Turpentines.— They are all stimulant, diuretic, and expectorant, and in larger doses, vermifuge and purgative. Dose of common turpentine, ½ oz. to 1 oz. They are used in digestive ointments. Oil or spirit of turpentine is a more stimulating diuretic, in doses of 2 to 4 dr.; it is also considered efficacious as an anti-spasmodic in colic (gripes), and as a remedy for worms. Dose for the latter purposes, from 2 to 4 oz., or sometimes still larger doses for worms. To cattle (in hoose, from worms in the bronchial passages) about 2 oz. To sheep, in rot, 1 dr. It is not a safe medicine for dogs, but is sometimes given in doses of 2 dr. with olive oil. Externally, it is used in stimulating liniments, embrocations, ointments, &c. It is very irritating to the skin of the horse, and also of the dog, instantly producing great excitement. Like the common and Venice turpentine, it enters into the composition of some digestive ointments.

Valerian.— A stimulant, acting chiefly on the nervous system. Dose for horses and cattle, 1 to 4 oz. in powder.

Vinegar.— Diaphoretic, cooling and anti-septic. In combination with honey, it is used in coughs. In large quantities it irritates the stomach; a pint is said to have destroyed a horse. It should always be plentifully diluted. Vinegar which contains much sulphuric acid should be avoided. It is chiefly used as an external application, as a lotion for strains, bruises, sprains, and inflammations; and hot as a revulsive. The vapors are thought to possess disinfecting properties, but are less effectual than chlorine.

Walnut.— The green shells are astringent, and sometimes applied, bruised, as a cataplasm, or in decoction as a lotion.

Water.— Besides its use as a drink, and as a vehicle for medicines, water is used remedially, on the hydropathic system. Rugs wetted with cold water, and well covered with dry ones, are used to produce perspiration, assisting their operation by copious draughts of cold water, adding 4 oz. of sweet spirit of nitre to each pailful. This treatment is said to have succeeded in epidemics of pleuro-pneumonia.

Whey.— A cooling and nutritive drink in inflammatory diseases, and during convalescence from them.

Willow Bark.— Possesses in some degree the same properties as Peruvian bark. Dose, in powder or decoction, 1 to 4 oz.

Wolfsbane. *Aconite.*— A virulent poison.

Wormwood.— A bitter tonic and vermifuge. An infusion from 2 to 4 oz. of the dry, or twice as much of the fresh herb, may be given in dropsy, and diseases of general debility; or from 2 to 4 dr. of the powder may be given in a ball. A few drops of the essential oil are often added to aloes, &c., for worms.

HORSE MEDICINES.

Alterative Balls. — Alterative medicines gradually purify the system without strongly affecting it. A ball may be given daily, or every other day, as required.

1. Barbadoes aloes, 10 dr., calomel, 3 dr., caraway, 1 oz., ginger, 3 dr., oil of caraway, 30 drops. Mix and divide into 4 balls.

2. Aloes, ginger, liquorice, of each 2 oz., Castile soap, 2 oz., mix with molasses, and make 4 balls.

3. Antimony, soap, guaiacum, of each 8 oz., camphor, 1½ oz. Make 16 balls.

4. Nitrate of potash, 1 oz., sulphate of antimony, sulphur, cream of tartar, of each 2 oz., resin, 3 oz., ginger, 1 oz., linseed meal, 4 oz. Make 8 balls.

Alterative Diuretic Balls. — 1. Dried common soda 1 oz., Castile soap 6 dr., resin 2 oz., liquorice powder ½ oz., tar to form 6 balls; 1 daily.

2. Acetate of potash ½ oz., resin ½ oz., fœnugreek 1 oz., molasses enough to form a mass for 2 balls; 1 daily.

Alterative Laxative Balls. — 1. Socotrine aloes 8 oz., soft soap 8 oz., common mass 16 oz.; mix; dose, 1 oz.

2. Aloes 10 dr., soap 12 dr., caraways 12 dr., ginger 4 dr., molasses q. s.* for 4 balls; 1 daily.

3. Aloes 1 dr., diuretic mass (No. 2) 9 dr.

4. Antimonial powder 1 dr., aloes 1 or 2 dr., diuretic mass (No. 2) 1 oz.

Alterative Powders. — 1. Sulphur 2 parts, black antimony 1, nitre 1; mix, dose ½ oz. to 1 oz.

2. Sulphur 4 dr., levigated antimony 2 dr., nitre 3 dr.; mix; in *hide-bound* and unthrifty coat, every night.

3. Nitre 16 oz., resin 16 oz., prepared antimony 4 oz., flowers of sulphur 24 oz.; mix; dose, 1 oz. every evening, with moistened corn, for 6 or 8 times.

Anodyne Balls. — To allay pain and cause sleep. 1. Camphor, opium, oil of caraway, of each ¼ oz., aniseed powder 2 oz., ginger 1 oz., Castile soap, 1½ oz. Mix with molasses, and make 3 balls.

2. Opium ½ dr. to 1 dr., camphor 1 dr., aniseed ½ oz., soft extract of liquorice q. s.

Anodyne Drenches. — 1. Opium 1 dr., dissolved in warm water, ½ pint; add 1 quart of starch gruel.

2. Oil of peppermint 50 drops, dissolved in a pint of warm water, with 2 oz. of gum Arabic; add tincture of opium ½ oz.

3. Mix tincture of opium ½ oz., with sweet spirits of nitre 1½ oz., essence of peppermint 1 dr., and water 1 pint.

Anti-spasmodic and Carminative Drenches. — For Spasmodic and Flatulent Colic, or Gripes.

[N. B. As most of these drenches would be injurious in *inflammation of the bowels* (Enteritis), care should be taken to distinguish between these diseases. Inflammation is known by the quick but small pulse, redness of the inside of the eyelids, coldness of the ears and legs, and scanty and high-colored urine. In colic, the attacks and remissions of pain alternate; in inflammation, the pain and distress continue. In colic, the pain is removed by friction and motion; in inflammation, it is increased. Colic is sudden in its attack; inflammation, more gradual in its approach.]

1. Brandy, rum, or gin, from 4 to 6 oz., hot water 12 oz. Mr. CLARK directs a

*q. s. means a sufficient quantity for the purpose.

wine-glassful of spirits to half a pint of warm water. A pint of ale is sometimes substituted.

2. Half a large bottle of Daffy's elixir, with hot water.

3. Tincture of pimento 4 oz., warm water half a pint.

4. Anodyne carminative tincture 2 to 4 oz., hot water half a pint.

5. *Anti-spasmodic Draught.* Spirit of nitric ether 2 oz., tincture of opium 1 oz., solution of aloes 4 oz.

6. Spirit of nitric ether ½ oz., tincture of opium ½ oz., oil of turpentine 3 oz., gruel 1 pint.

7. Rectified oil of turpentine 3 oz., tincture of opium 1 oz., warm ale 1 pint. If it does not relieve, repeat half the quantity with 1 oz. aloes dissolved in warm water.

8. Strong ether 1 oz., laudanum 2 oz., oil of peppermint 1 dr., ale and gin, each a ¼ of a pint.

9. Camphor 2 dr., tincture of opium 1 oz., oil of peppermint 30 drops, warm water 1 pint. In a violent attack, add 1 oz. of spirit of turpentine.

10. The juice of three or four onions, with half a pint of sound ale.

11. Pepper ½ oz., oil of turpentine 3 oz., laudanum 1 oz., ale ¼ pint.

12. Pepper a teaspoonful, juice of 2 or 3 large onions, gin ¼ of a pint.

13. Laudanum 1 oz., sweet spirit of nitre 4 oz., oil of juniper 1 oz., tincture of benzoin 2 oz., spirit of sal volatile 1½ oz., oil of peppermint 1 dr.; mix; give a fourth part in warm water or gruel, and repeat in 3 or 4 hours, if necessary.

14. *For Flatulent (Windy) Colic.* Tincture of opium 1 oz., of myrrh 1 oz., sulphuric ether 6 dr., tepid water a pint. Repeat in an hour, if relief is not obtained.

15. Heat ½ ℔ of common salt, and quench it in a quart of good ale. Give it new milk warm.

16. In flatulent colic when there is an evident distension of the abdomen with gas: chloride of lime ½ oz. (or solution of chlorinated soda 1 oz.), water 1 quart; repeat in half an hour, if necessary.

17. Ginger, caraway, nutmeg, pimento, of each 1 oz., bruise, and boil them in ¾ of a pint of ale for a few minutes, and add a gill of any spirits.

Anti-spasmodic Ball. — To relieve cramps, spasms, and the like. Opium 1 dr., powdered belladonna 10 gr., linseed meal 3 dr., palm oil or molasses q. s.; twice or thrice a day, in spasm of the neck of the bladder.

Anti-spasmodic Drench for Suppression of Urine. — Nitre 1 oz., camphor 2 dr., linseed tea 1 pint.

Anti-spasmodic Drenches for Locked-Jaw. — 1. Opium 1½ dr., camphor 2 dr., ginger 3 dr., brandy-and-water 8 oz.

2. Ether ½ oz., tincture of opium 2 oz., camphor 1 dr., peppermint water ½ pint.

Antimonial or Diaphoretic Alterative Balls. — 1. Levigated antimony 2 or 4 dr., caraway seeds 4 dr., molasses q. s. to form a ball.

2. Prepared antimony 2 dr., nitre 3 dr., sulphur 2 dr., linseed meal 2 dr., palm oil to form a mass; one every night in megrims.

3. Tartarized antimony 2 dr., elecampane 2 oz., guaiacum 6 dr., sulphur 1 oz., molasses and flour to form 6 balls; 1 daily.

4. Tartarized antimony 3 dr., ginger a scruple, soap 1 oz. For 3 balls; one every other morning.

5. Emetic tartar 5 oz., ginger 3 oz., opium 1 oz., and syrup to make 16 balls.

Astringent Balls. — These are given in diarrhea, diabetes, etc.

1. Peruvian bark 12 oz., grains of paradise 2 oz., gentian 3 oz., honey q. s. for 16 balls; 1 every morning; for diabetes.

2. Catechu ½ oz., alum 3 dr., cascarilla 2 dr., flour 2 dr., molasses q. s.

3. Catechu 2 dr., opium ½ dr., linseed meal 2 dr., molasses to form a ball. For

profuse staling, 1 night and morning; if they confine the bowels, add 1 dr. of aloes.

4. Peruvian bark 1½ oz., alum ½ oz., molasses q. s. For the same purpose.

5. Oak bark 1 oz. (or Peruvian bark ½ oz.), opium 1 dr., ginger 2 dr., syrup to form a ball; for diarrhea.

6. Nutgalls 2 dr., cassia ½ dr., conserve of roses to form a ball.

7. Burnt rhubarb 1 dr., compound powder of chalk 3 dr., common mass 6 dr.; for diarrhea.

8. For bloody urine. Acetate of lead 10 gr., sulphate of zinc 40 gr., catechu 4 dr., conserve of roses to form a ball; once daily.

Balls for Grease. — See Diuretic Balls, and Alterative Balls.

Balls for Inflammation of the Lungs, Bronchitis, etc. — 1. Antimonial powder 2 dr., digitalis 3 dr., cream of tartar, 3 dr., honey to form a ball; 1 every 4, 6, or 8 hours, in inflammation of the lungs.

2. Digitalis 1 dr., emetic tartar 1½ dr., nitre 3 dr., honey q. s. (sufficient quantity); when the pulse intermits, reduce the dose to half.

3. Nitre 6 dr., emetic tartar 2 dr., flour and syrup to form a ball; twice a day.

4. Digitalis 1 dr., emetic tartar 1 dr., nitre 3 dr., sulphur 1 dr., linseed meal 2 dr.; beat together with palm oil.

5. Epidemic catarrh. To the last add 2 dr. of the Physic Mass; repeat this twice.

6. For pneumonia. White hellebore ½ dr. (or extract of belladonna 2 dr., or digitalis 1 dr., or calomel 1 dr. with opium ½ dr.), emetic tartar 3j, nitre and linseed meal each 2 dr.; one twice a day.

7. In the advanced stage, when suppuration has taken place. Carbonate of ammonia 1½ dr., opium 1 dr., aniseed ½ oz., syrup to form a ball.

8. *Cough Ball.* Digitalis ½ dr., camphor and emetic tartar each 1 dr., nitre 3 dr., and linseed meal 1 dr., to be made up with Barbadoes tar.

Caustic for Poll-Evil. — 1. Lunar caustic 1 dr., distilled water ½ oz.

2. Corrosive sublimate 2 dr., water 3 oz.

Scalding Mixture for Poll-Evil. 1. Sublimate 2 dr., verdigris, 2 dr., blue vitriol 2 dr., sulphate of iron 4 dr., honey 2 oz., oil of turpentine 8 oz., spirit of wine 4 oz.; to be applied hot, and confined by stitches.

2. Sublimate 1 dr., finely powdered and mixed with 4 oz. of basilicon, and melted to scalding heat.

3. Caustic potash 1 dr., rubbed down with 4 oz. oil of turpentine.

Clysters (Injections). — *Laxative.* 1. Aloes 1 oz., water 2 or 3 quarts.

2. Water gruel 1 gallon, olive oil 1 pint.

3. Common salt 6 oz., or soap 2 oz., thin gruel or broth 5 quarts.

4. Soft soap 2 oz., warm water ¾ of a pailful.

5. Chamomiles, fennel seed, coriander seed, of each 1 oz.; caraways ½ oz.; boil in 2 quarts of water to 3 pints; strain, add 2 oz. Epsom salts, and when nearly cool, ½ pint of olive oil and ½ pint of tincture of senna.

Purgative. 1. Aloes 8 to 12 dr., salt 8 oz., water 1 gallon; in staggers.

2. Senna 2 oz., tobacco 2 oz.; boil for a quarter of an hour in 2 quarts of water, strain and add common salt 4 oz., emetic tartar 1 dr.; for 2 doses. *Very irritating.*

Emollient. Dried mallow leaves, or marsh-mallow root, 1½ oz., linseed ½ oz., water 2 quarts; boil and strain; to be used warm.

Emollient and Anodyne. — 1. Gruel 2 pints, liquid starch or arrow root 1 pint, powdered opium 1 dr. to 1½ dr.

2. Boil 6 poppy-heads in 4 quarts of water till reduced to 2 quarts; add prepared chalk 2 oz., boiled starch 2 quarts; once or twice a day in diarrhea.

3. A double handful of coarse bran, 6 poppy-heads, 2 quarts of water; boil and strain.

4. Tripe liquor (or suet boiled in milk) 3 pints, thin starch a quart, laudanum ½ oz., in diarrhea.

Cooling. Butter-milk or whey, barley-water, of each a quart.

Carminative and Stimulant. 1. Chamomiles 3 oz., aniseed or fennel-seed 1½ oz., 4 poppy-heads; boil the poppies in sufficient water, and infuse the flowers and seeds in the hot decoction.

2. *To Expel Wind.* Boil 1 lb of figs in 3 quarts of water for half an hour, then add 2 handfuls of chopped rue; boil a few minutes, strain and add 8 oz. of olive oil.

For Gripes. Mash 2 onions, pour over them 2 oz. of oil of turpentine and 4 quarts of thin gruel.

Astringent. 1. Alum whey 1 quart, thin starch a quart.

2. Suet milk 3 pints, starch gruel 2 pints, laudanum ½ oz.

Vermifuge. For Thread Worms. Powdered aloes ½ oz., powdered gum Arabic ½ oz.; mix with half pint of boiling water.

Condition Powders. — A want of condition is generally indicated by, and connected with, the unthrifty state of the coat, which the above (alterative) powders are supposed to remedy. Sometimes warm and bitter tonics are added to those ingredients which promote the action of the skin and kidneys, to increase the appetite and promote nutrition; but the most scientific practitioners condemn these additions; and particularly when the animal is changing its coat.

1. Sulphur 2 lb, fœnugreek 4 lb, cream of tartar 1 lb, liquorice 1 lb, nitre 1 lb, black antimony ½ lb, gentian ¼ lb, aniseed ¼ lb, common salt 1 lb; dose, 1 oz. daily, for 2 or 3 weeks.

2. Gentian 4 oz., liquorice 4 oz., fœnugreek 16 oz., diapente 6 oz., nitre 4 oz., salt 4 oz.; to promote appetite.

3. Aromatic powder 2 oz., assafetida ¼ oz., cream of tartar ¾ oz., crocus metallorum ½ oz.; for 2 doses.

Powder for the Gripes. Aloes, senna, ginger, cream of tartar, of each 1 lb; mix.

Worm Powders. — 1. Sulphur 12 parts, quicksilver 4 parts; triturate together till the mercury is extinct; then add male fern, rhubarb, tansy, gentian, of each 4 parts; wormwood, savin, aloes, castor seeds, of each 1 part; dose, 1½ oz. to 2 oz.

2. Fern root 4 parts, tansy 2, assafetida and aloes, each 1 part; dose, as the last.

3. Sulphur 1 oz., emetic tartar 4 dr., common salt 8 oz., liver of antimony 1 oz.; mix; for 6 doses; one daily in wetted corn.

Bitter Powder, for loss of appetite. Sulphate of potash 2 oz., gentian 1 oz., flour sufficient. To be given twice a day.

Cordial and Stimulant Drenches. — These are used in the same cases as the cordial balls, but are preferred where a more quick and powerful operation is required. Some of them are used in indigestion and slight attacks of colic.

1. Cloves and black pepper (bruised) ½ oz., boiling water a quart; infuse and give warm.

2. Any of the cordial balls may be dissolved in warm ale or water, or peppermint water, and given as a drench.

3. A bottle of wine, 1 oz. of extract of juniper berries, and ½ oz. of cinnamon in powder.

4. Peppermint 2 oz., chamomiles, ½ oz.; infuse in 2½ pints of water, and give it before it is cold; in slight colic and indigestion.

Cordial Anti-spasmodic Drink. — *For Spasm of the Diaphragm.* Ginger 1 dr., caraway 2 dr., laudanum 1 oz., sweet spirits of nitre 1 oz., warm ale ½ pint.

Cordial Balls. — For exhaustion from over-exertion, and as a stimulant to weak stomachs. But their frequent and unnecessary use is hurtful.

1. Ginger and gentian equal parts, molasses to form a mass; dose, 1 oz. to 1½ oz.

2. Caraway, bruised raisins, of each 4 parts, ginger and palm oil, of each 2 parts.

3. Aniseed, caraway seed, cummin seed, each 4 oz., ginger 2 oz., molasses to mix. Make into 5 balls.

4. Allspice 1 ℔, barley meal 2 ℔, molasses to mix. In 2 oz. balls.

Colic Balls. Opium ½ oz., Castile soap, camphor, each 1 oz., ginger, cassia, each ½ oz., liquorice powder 2 oz. Make 4 balls, with molasses to mix.

Colic Tincture. Opium 1 dr., horseradish 2 oz., pepper 1 oz., spirit of nitric ether 1 oz. Let stand 14 days; dose, 1 oz., with 2 oz. of spirit of nitric ether every 2 hours, as long as necessary.

Gripe Tincture. Tincture of Pimento. Ground pimento 1 ℔, rectified spirit, and soft water, of each 3 pints; digest for some days, and strain; give 4 fluid oz. at once, and repeat every hour till relieved.

Cough Balls. — The following receipts are chiefly intended for chronic coughs and thickness of wind. The bowels should be kept open by mashes and an occasional laxative. Coughs occasioned by worms require a different treatment. In coughs connected with inflammation of the chest, and epidemic catarrh, see Balls for Inflammation of the Lungs.

1. Aloes 2 oz., digitalis (powdered) 1 oz., common mass 13 oz.; dose, 1 oz., twice a day.

2. Emetic tartar ½ dr., digitalis ½ dr., nitre 1½ dr., tar enough to form a ball; every night.

3. Ipecacuanha 1 dr., camphor 2 dr., liquorice powder 1 dr., honey to form a ball; to be given every morning.

4. Sulphur ½ oz., assafetida 1 oz., liquorice powder 1 oz., Venice turpentine 1 oz., for 4 balls; one every night for 4 times.

5. P. marsh-mallow root and liquorice, of each 1 dr., elecampane, sulphur, and Kermes' mineral, of each ½ dr., honey to form a ball; twice a day.

6. Squill 2 dr., gum ammoniac 4 dr., ipecacuanha 4 dr., opium 4 dr., pimento 1 oz., balsam of sulphur 4 oz., Castile soap 2 oz., molasses to form a mass for 6 balls; one twice a day.

7. Castile soap, aniseed, liquorice, of each 5 oz., Barbadoes tar 6 oz., ammoniacum 3 oz., balsam of Tolu 1 oz., honey q. s. to make a mass for 12 balls; one every morning for a fortnight.

8. Digitalis 1 dr., nitre 2 dr., liquorice 4 dr., tar enough to form a ball.

9. Digitalis ½ dr., camphor 1 dr., emetic tartar 1 dr., nitre 3 dr., linseed meal 1 dr., make up with Barbadoes tar, and give one daily.

Diuretic Balls. — For swelled legs, grease, &c., for carrying off bad humors, and in many chronic diseases. The too free use of diuretics injures the kidneys, and weakens the system. See Alterative Balls.

1. Rosin, soap, nitre, of each equal parts, beaten together into a mass; dose 1 oz. to 1½ oz.

2. Common turpentine 4 oz., Castile soap 4 oz., caraway 8 oz., ginger 1 oz., flour q. s.

3. Nitre 1 ℔, Castile soap ½ ℔, common turpentine 1 ℔, barley meal 2½ ℔, or sufficient; dose, about 1 oz.

4. Common turpentine 16 oz., sulphur 24 oz., nitre 8 oz., honey 8 oz., flour or linseed meal q. s.; dose 1½ oz.

5. Common turpentine (or powdered resin) ½ oz., linseed meal ¼ oz., ginger ½ dr., palm oil q. s.

6. Yellow rosin 2 oz., common turpentine 4 oz., soap 3 oz., melt together, stir in 1

oz. sweet oil, add oil of aniseed ½ oz., oil of juniper ½ oz., ginger 2 dr., linseed meal q. s.; mix, and divide into 8 balls; 1 a day till the water is affected.

Tonic Diuretic Ball. Gentian 1 dr., ginger ½ dr., sulphate of iron 2 dr., diuretic (No. 11) ½ oz., oil of juniper 10 drops, syrup of squills ½ oz.; twice a day in dropsy of chest; less frequently in swelled legs.

Tonic and Diuretic Ball for Pleurisy. Sulphate of copper 1½ dr., ginger and gentian 2 dr. each, with Venice turpentine.

Diuretic Drenches, for Dropsical Complaints, &c. The use of stimulating diuretics in retention of urine from inflammation of the neck of the bladder is dangerous.

1. *Dropsy Drench.* Decoction of wormwood in ale 2 quarts, soap 1 oz., grains of paradise 6 dr., long pepper 6 dr., molasses 3 oz.; for one dose, fasting.

2. For dropsy of the belly: Castile soap 2 oz., strong beer 1 pint; dissolve and add cascarilla 2 dr., ginger 3 dr., oil of juniper 2 dr. (or balsam of copaivi 1 oz.); mix; for one dose.

3. White soap 1 oz., spirit of turpentine 1 oz., honey 4 oz., decoction of linseed 2 quarts; for two doses.

4. Turpentine 2 oz., yolks of 6 eggs; triturate together till incorporated, and add gradually 2 quarts of linseed tea; for two doses.

5. Acetate of potash 2 oz., camphor (rubbed with yolks of 2 eggs) 2 dr., decoction of linseed 2 quarts; for 2 doses, at an interval of some hours; in irritation of the urinary passages, especially arising from cantharides or resinous irritants.

6. *Colchicum Drench.* Colchicum wine 2 oz., simple oxymel 4 oz., barley water 1 quart.

7. Sweet spirit of nitre 4 oz., white wine 1 quart, water 2 quarts; for 3 doses; in dysuria not arising from mechanical obstruction or inflammation of the neck of the bladder.

8. *Saline Diuretic Drink.* Glauber's salt 2 oz., nitre 6 dr., warm water 1 pint, sweet spirit of nitre 1 dr.

Drenches for Coughs, Epidemic Catarrh, etc. — For linseed tea, compound infusion of linseed, barley water, etc., see DRINKS.

1. *Simple Emulsion.* Olive oil 2 oz., honey 3 oz., soft water 1 pint, subcarbonate of potash 2 dr.; mix.

2. Linseed tea 1 pint, honey 2 oz., syrup of poppies 2 oz., linseed oil 4 oz.

3. *Cough Drench.* Linseed oil 2 oz., liquor of potash 40 drops, molasses 1 oz., soft water 10 oz.; mix.

4. Powdered gum 2 oz., warm water a quart; dissolve, and add honey 4 oz.

5. Marsh-mallow root 2 oz., water 2½ or 3 pints; boil to a quart, and add 4 oz. of molasses.

6. Liquorice and marsh-mallow roots, of each 2 oz., water a quart; boil, strain, and add honey 4 oz.

7. Oxymel of squills 2 oz., opium ½ dr. to 1 dr., linseed oil 2 oz.; mix the opium with 8 oz. of water, and add the others; for 1 dose.

8. For chronic coughs: Tar-water ½ pint, lime-water ½ pint, powdered squill 1 dr.; every morning.

9. In inflammation of the lungs, or catarrhal fever: Tartarized antimony 2 dr., digitalis 1½ dr., nitre 3 dr., simple oxymel 4 oz., compound decoction of linseed 8 oz.

10. The same, omitting the digitalis, and substituting 6 oz. of warm water for the dec. linseed. In influenza, when soreness of throat prevents swallowing balls.

11. In inflammation of the lungs: Ipecacuanha 2 dr., laudanum 4 dr., powdered camphor 2 dr. Mindererus' spirit 4 oz., linseed tea ½ pint.

12. In pleurisy: Boil pearl barley, split figs, and raisins, each 6 oz., and liquorice root 2 oz., in 4 quarts of water down to 3; strain, and add honey 1 lb, vinegar 1 pint; give 1 oz. nitre in a pint of this decoction every 6 hours.

13. In epidemic (epizootic) catarrh: Spirit of nitrous ether 1 oz., Mindererus' spirit 6 oz., with linseed tea.

14. Gibson's *Drink for Catarrhal Epidemic.* Colt's-foot, hyssop, chamomile, of each a handful, linseed and garlic, each 1 oz., liquorice root sliced 1 oz., saffron ½ oz.; infuse in 2 quarts of boiling water; give half in the morning, and the rest in the afternoon.

15. In influenza (after bleeding): Oil of croton 5 drops, nitre 4 to 6 dr., tartarized antimony 1 dr., spirit of nitric ether ½ oz. to 1 oz., solution of acetate of ammonia 2 to 4 oz., with warm water sufficient.

Drenches for Diarrhea, Dysentery, and Diabetes. — *For Diarrhea.* 1. Restringent Draught. Opium 1 dr., prepared chalk 1 oz., compound powder of tragacanth 1 oz., mint water 1 pint.

2. Prepared chalk 8 oz., gum Arabic ½ oz., catechu 2 dr., thin starch ½ pint.

3. Prepared chalk 1 oz., catechu 2 dr., p. opium 1 dr., p. ginger 1 dr.; rub together with contents of one egg, and add ½ pint of thin gruel.

Draught for Enteritis. Opium 1½ dr., tartar emetic 1 dr., spirit of nitrous ether 1 oz.; mix, and add 1½ pint of linseed oil.

For Dysentery or Molten Grease. Castor oil 8 oz., ipecacuanha 1 dr., opium 20 gr., liquid arrowroot 8 oz. Repeat once or twice at intervals of 6 hours; then substitute boiled starch for the castor oil.

For Diabetes. 1. Opium 1 dr., ginger 2 dr., p. oak bark 1 oz., decoction of oak bark 1 pint.

2. Sulphuret of potash 2 dr., uva ursi 4 dr., oak bark 1 oz., catechu 2 dr., opium ½ dr. In strong chamomile tea.

3. Calomel 3 dr., cascarilla 2 dr., salt of steel 2½ dr., salt of tartar 1½ dr., tincture of opium ½ oz., strong beer q. s.

Farcy and Glanders, Balls for.— Mr. Coleman says he has tried the various preparations of arsenic, aconite, digitalis, hemlock, henbane, hellebore, nightshade, &c., in glanders, without any curative effect. Mr. Youatt considers it useless to attempt the cure of glandered horses; but that farcy in its early stages and mild form may be successfully treated. Robert Stewart, in his *American Horse Book*, shows very conclusively that both *Farcy* (in its worst stages) and *Glanders* are curable by the use (after bleeding) of a strong decoction of Tobacco, administered as a drench, and by washing out the nostrils at the same time with the tobacco water. Mr. Blaine says, "All the mercurials have been used with benefit in farcy; but they must be discontinued as soon as the mouth is affected, or sickness, loss of appetite, &c., produced."

1. Ethiops mineral 2 dr., blue pill 1 dr., prepared antimony 3 dr., diuretic mass 4 dr. One every morning.

2. Strong mercurial ointment 2 to 3 dr., guaiacum 3 dr., soap 4 dr., fœnugreek 12 dr., molasses to form a mass for 6 balls.

3. Sulphate of copper 1 dr., corrosive sublimate 8 gr., linseed powder ½ oz.

4. Corrosive sublimate 10 to 20 gr., opium ½ to 1 dr., powdered aniseed ½ oz., with syrup to make a ball.

5. Sulphate of copper 1 dr., calomel 20 gr., common turpentine 3 dr., liquorice powder and syrup q. s. for one ball.

6. Sulphate of iron 2 dr., Peruvian bark 1 oz., opium ½ dr., syrup to form a ball.

7. Sulphate of iron 2 dr., iodide of potassium 10 gr., ginger 1 dr., gentian 2 dr., made into a ball with molasses.

8. Sublimate 10 gr., gentian 2 dr., ginger 1 dr., linseed meal ½ oz., palm oil to form a ball; night and morning for a fortnight; for farcy.

9. Sulphate of copper ½ dr. to 1 dr., ginger and gentian, each 1 dr., linseed meal and palm oil to form a ball; morning and night for a fortnight, then daily as long as necessary: in glanders.

Farcy and Glanders, Drenches for.—1. Expressed juice of cleavers 6 oz., strong decoction of hempseed 6 oz., essence of spruce 6 oz.; mix; give every evening; and a mercurial or arsenical ball in the morning. See Farcy Balls, for remarks.

2. *For Glanders.* Sulphate of copper 3 to 6 dr., gum Arabic 2 or 3 oz., dissolved in 2 or 3 pints of water.

Stewart's Tobacco Drench for Glanders is thus given in his excellent work, "*American Farmers' Horse-Book.*"—After taking 3 quarts of blood from the neck vein, "have ready a strong decoction of tobacco, of which put one-fourth of a pint in a pint of warm water, and turn it down the horse."

"Procure a stick about two feet long, and fasten securely upon it by twine a soft rag swab; let the end of the string be long enough to be held with the stick in your hand, so that the cloth, if it should come off the stick, can be held by the string and again be placed. Dip the swab into very warm, but weak tobacco water, and wash out the nostrils as high up as you can. Repeat this carefully a few times, and then wash out the nostrils thoroughly with the mop and warm water."

"Use the mop in the nose 8 to 10 days; drench with the tobacco mixture every third day for the time above mentioned; give the horse as much sulphur and rosin as you can get him to eat, finely pulverized, in his food for ten days; 4 oz. of sulphur and 2 oz. of rosin will be a full dose." Let the food be light and relaxing—grass is preferable, if in season.

Disinfect the stable daily with the strongest possible tobacco smoke while the horse is diseased, and wash the mangers and stalls with the tobacco water.

Fever Balls.—1. Emetic tartar ½ dr., camphor ½ dr., nitre 2 dr., common mass 6 dr., or q. s. for 1 ball; to be given once or twice a day.

2. Camphor 1 dr., nitre 6 dr., antimonial powder 2 dr., flour and syrup to form a ball.

3. Antimonial powder 2 dr., nitre 3 dr., cream of tartar 2 dr., honey to form a ball; in influenza, twice a day, after a mild laxative.

Fever Drenches.—1. Nitre 2 dr., tartar-emetic ½ dr., warm water or thin gruel 12 oz.; once or twice a day.

2. Sweet spirit of nitre 1 oz., spirit of Mindererus 6 oz., water 4 oz.

Draught for Influenza. Spirit of nitrous ether 2 oz., tartarized antimony 1 dr., warm water ½ pint.

Laxative and Purgative Drenches.—1. Glauber's or Epsom salts 6 or 8 oz., whey or gruel 1 quart, castor oil 6 or 8 oz.

2. Barbadoes aloes 2 dr., tartarized antimony 1 dr., warm water 4 oz.; mix, and add castor oil 4 oz.

3. *Laxative Febrifuge in Influenza.* Linseed oil 12 oz., nitre 3 dr., camphor powdered 1 dr., sweet spirit of nitre 1 oz., warm water ½ pint.

4. *Laxative Anodyne Drink.* In inflammation of the bowels: Linseed oil 1 pint, opium 2 scruples, sweet spirit of nitre 6 dr., warm water 4 oz.

5. *A Cooling Purging Drink.* Infuse 2 oz. senna with 3 dr. salt of tartar in a quart of boiling water for 2 hours; strain, and add 4 oz. Glauber's salts, and 2 or 3 dr. of cream of tartar.

6. *Draught for Hepatitis.* Carbonate of potash, and aloes, each 2 dr.; dissolve in hot water; shake with 12 oz. of linseed oil, and calomel 1 dr. Repeat twice a day without the aloes, until relief. When pain, add 1 oz. of tincture of opium.

Laxative Balls.—1. Ipecacuanha 1 dr., aloes 3 to 4 dr., liquorice powder and mucilage to form a ball.

2. Aloes 3 to 4 dr., soap 3 dr., oil of caraway 20 drops, syrup q. s.

3. Aloes 3 to 4 dr., soap 4 dr., emetic tartar ½ dr., mucilage to form a ball.

Mashes.—*Bran Mash.* Bran ½ peck; put it in a bucket, and pour on it enough scalding water to wet it thoroughly; let it be well stirred with a stick, or worked with the hands, and let it stand, covered up, till new-milk warm. Emollient and slightly laxative. When intended to be nutritive, oats should be scalded with the bran.

Malt Mash. Upon a peck of ground malt pour a gallon and a half of boiling [better not quite boiling] water. Stir frequently, and give when new-milk warm. Nutritive in diseases attended with great debility.

Linseed Mash. Cooling Decoction. Linseed 2 quarts, coarse sugar 2 oz., boiling water 6 quarts; simmer for three or four hours.

Mild Drinks.—Demulcent, pectoral, cooling, and diuretic.

Barley Water. Barley 1 ℔, water 2 gallons; boil to 6 quarts, strain, and add 1 ℔ of honey. If common barley is used, it should be first boiled with a little water, and this thrown away. If pearl barley is used, this will be less necessary. In inflammatory and catarrhal complaints.

Oatmeal Gruel. 1. Mix gradually 4 oz. of sweet oatmeal with as much cold water as will form a smooth mixture. Put 2 quarts of water in a saucepan over a clear fire, and before it gets very hot add in the mixture of oatmeal and water; stir the whole till it boils, and let it simmer a little while. Take care not to smoke it.

2. Mix half a pint of oatmeal with the same measure of water; triturate them in a marble mortar with a wooden pestle, for some time; then add 1 gallon of boiling water, and boil for a few minutes.

Compound Decoction of Linseed. Linseed 4 oz., liquorice root 4 oz., mallows 2 handfuls; boil in six quarts of water for half an hour. Let the horse drink it freely.

Cooling and Refreshing Drink. Barley water, linseed tea, or blanche water, 8 quarts, simple oxymel 16 oz.

Camphorated Diuretic Drink. Water 10 quarts, nitre 1 oz., camphor (rubbed with yolks of 2 or 3 eggs) ½ oz.; mix, and let the animal drink when thirsty.

Nauseating Balls.—These are given in inflammatory diseases.

1. Powdered white hellebore ½ dr., linseed meal 4 dr., molasses to form a ball; one night and morning till some effect is produced; in inflammation of the kidneys.

2. White hellebore 20 gr., common mass or other proper material to form a ball; give one every 4, 6, or 8 hours, till symptoms of nausea appear, taking care not to carry it too far.

Physic or Purging Balls.—The animal should be prepared by bran mashes for two days, and the ball given fasting in the morning. Gentle exercise with a ball is useful, but not after it begins to operate. Genuine Barbadoes alone should be used, and the dose seldom need exceed 6 dr. A week should be allowed after the operation of one ball before another is given. See Aloes, in the Veterinary Materia Medica at commencement.

1. (Cathartic Mass.) Bruised aloes 8 oz., olive oil 1 oz.; melt together in a vessel placed in hot water; remove it from the fire, add 3 oz. of molasses, and stir all together; dose, 6 to 12 dr., equal to 4 to 8 dr. of aloes.

2. (Stronger.) To each dose of the last add from 4 to 8 drops of croton oil.

3. B. aloes 4 to 8 dr., soap 3 to 4 dr., ginger 1 dr., oil of cloves 10 drops (or oil of caraway or aniseed 20 drops), water 1 dr. or q. s.; beat together into a mass. Mr. WHITE says it is the best that can be employed.

4. B. aloes 15 oz., ginger 1 oz.; mix and beat up with 8 oz. of palm oil. Dose, 1 oz. to 1½ oz.

5. B. aloes 24 dr., Cape aloes 12 dr., olive oil 4 dr.; molasses 12 dr.; dose, 7 to 14 dr.; mix as No. 1.

6. B. aloes 5 dr., 7½ dr., or 9 dr., oil of caraway 10 drops; made up with palm oil or lard.

7. Melt B. aloes (in a tin vessel immersed in boiling water) with a fifth of its weight of molasses, and, while soft, pour it into paper moulds; 1 oz. is a full dose for a large-sized saddle or coach horse.

8. B. aloes 5 to 8 dr., cream of tartar 2 dr., oil of cloves 10 drops, molasses to form a ball.

9. Aloes 7 dr., Castile soap 4 dr., aromatic powder 1 dr., oil of caraway 6 drops, mucilage to form a ball.

Stomachic Balls.— For indigestion, and during recovery from debilitating diseases which have impaired the appetite. A mild purge should be previously given.

1. Gentian, quassia, grains of paradise, of each 3 dr., Venice turpentine q. s. for 1 ball.

2. Gentian 2 or 3 dr., carbonate of soda 1 dr., ginger 1 dr., molasses to form a ball.

3. Chamomile 2 dr., calumba 2 dr., common salt 1 dr., fœnugreek 2 dr., syrup to form a ball.

4. Myrrh 1½ dr., cascarilla 2 dr., Castile soap, 1 dr., syrup to form a ball.

5. *Laxative Stomachic Ball.* Aloes 3 dr., rhubarb 3 dr., subcarbonate of soda 2 dr., ginger 1½ dr., molasses to form a ball.

6. Calumba and chamomile in powder, each 2 dr., Venice molasses ½ oz., oil of caraway 25 drops, honey q. s. See Tonic Balls.

Stomach Staggers, Drenches for, or Staggers from Indigestion.

1. After a ball of aloes and calomel, and clyster of salt water: Spirit of sal volatile ½ oz., cascarilla powder 2 dr., warm water ½ pint; twice a day; and the same without the cascarilla every hour.

2. Aloes 3 dr., pimento 2 dr., ginger 1 dr.; infuse in a quart of hot water, and when cold add 2 oz. spirit of turpentine, and 1 oz. of spirit of hartshorn. Repeat in an hour if required.

3. *Laxative Tonic Drinks.* Linseed oil 1 pint, powdered gentian 2 dr.; every 6 hours till the bowels are properly opened.

4. Common salt 4 oz., ginger 2 dr., magnesia 1 oz., warm water 1 quart.

5. Valerian 1 oz., serpentary ½ oz., saffron 2 dr.; infuse in a pint of boiling water, and, when nearly cold, strain off, and add 1 oz. tincture of assafetida and 2 dr. of laudanum.

6. *After a Purgative.* Volatile tincture of valerian 1 oz., powdered valerian 1½ oz., peppermint water 8 oz.; mix, for a dose.

Tonic Balls.— In diseases attended with general debility, and to restore strength after a tedious illness.

1. Peruvian bark 1 oz., opium ½ dr., ginger ½ dr., oil of caraway 20 drops, molasses to form a ball.

2. Sulphate of quinine 1 dr., gentian, oak bark, and honey, to form a ball.

3. Gentian 1 dr., ginger ½ dr., cascarilla 1 dr., molasses and linseed meal to form a ball.

4. Myrrh 2 dr., mustard flour 1 dr., catharides 5 gr., chamomile 4 dr., Venice turpentine q. s. for one ball.

5. Gentian 4 dr., chamomile 2 dr., carbonate of iron 1 dr., ginger 1 dr., syrup q. s. for one ball.

6. Quassia 2 dr., canella 2 dr., opium ½ dr., ginger 1 dr., molasses q. s.

Mineral Tonics. 1. Sulphate of iron ½ oz., aromatic powder 2 dr., mucilage q. s. to form a ball.

2. Scales of iron 12 oz., gentian 8 oz., honey to form a mass.

3. Gentian 4 dr., chamomile 2 dr., carbonate of iron 1 dr., ginger 1 dr., syrup for one ball.

4. Sulphate of iron 2 dr., carbonate of potash 2 dr., cascarilla 2 dr., caraway 4 dr., molasses q. s.

Tonic Drenches.—Tonics are more generally administered in the form of balls.

1. *Mild Tonic in latter stage of Epidemic Catarrh or Distemper.* Gentian 1 dr., powdered ginger ½ dr., cascarilla 1 dr., warm water ½ pint, sweet spirit of nitre ½ oz. to 1 oz.; to be repeated night and morning unless they quicken the pulse.

2. Gentian root 2 oz., smaller centuary 1 oz., wormwood ½ oz.; boil in 3 pints of water to a quart.

3. *Bitter Drench.* Quassia chips 2 oz., water 3 pints; boil to 2 pints; for 3 doses.

4. Quassia 1 oz., ginger 2 dr., water 2 pints; boil for 10 minutes; for 2 doses.

Worm Balls.—1. Calomel 1 or 2 dr. at night, and an aloetic ball in the morning.

2. Emetic tartar 2 dr., ginger a scruple, linseed meal and molasses to form a ball; one every morning an hour before feeding.

3. Calomel 8 gr., arsenic 8 gr., tin filings 1 oz., Venice turpentine ½ oz.; mix; and give every morning fasting, for a fortnight.

Worm Drenches.—1. Common salt 2 oz., infusion of wormwood a quart. Repeat it for some days.

2. A quart of linseed oil.

3. Oil of turpentine 4 oz., linseed or castor oil 8 oz., gruel a pint; preceded by a mild dose of aloes, and bran mashes.

4. Fern root 2 oz., valerian 1 oz., DIPPEL'S animal oil (empyreumatic oil of hartshorn) 1 oz., yolks of 2 eggs, honey 2 oz.; boil the roots in 2 pints of water to half, incorporate the oil with the egg, and then the honey, and mix the whole with the decoction.

5. Animal oil 1 oz., yolks of 2 eggs, honey 1 oz., water or some bitter infusion a quart. CHABERT recommends infusion of savory as a vehicle for the oil.

6. Soot (wood soot?) in fine powder 2 oz., spirit of wine 2 oz.; mix, and add a quart of infusion of rue, or of tansy. Some practitioners prefer milk as a vehicle for worm medicines. For other worm remedies, see Balls, above.

Yellows, or Jaundice, Balls for, and Inflammation of Liver.—1. For hepatitis without purging: Podophyllum 1 dr., antimonial powder 2 dr., aloes 3 dr., syrup to form a ball; one every four or five hours, till the bowels are opened.

2. Podophyllum ½ dr., aloes 1 dr., soap 2 dr., rhubard ½ oz., syrup to form a ball; to be given every 12 hours, till it purges moderately.

3. Aloes 2 dr., podophyllum 1 dr., syrup to make a ball, twice a day.

4. Opium 1 dr., podophyllum 1 dr., emetic tartar 2 dr.; liquorice powder 3 dr., syrup to form a ball; once every 12 hours.

5. Opium ½ dr., podophyllum 1 dr., resin 3 dr., carbonate of potash 2 dr., with soft soap. To be preceded by blisters to the side, and purgative draughts.

Yellows (Jaundice) without Fever. 1. Podophyllum 1 dr., aloes 2 dr., soap 2 dr.; for one ball; night and morning till purged, then so as to keep them lax.

2. Podophyllum ½ dr., aloes 1½ dr., Castile soap 2 dr., rhubarb 3 dr., syrup to form a ball.

3. In the latter stage, when not costive, podophyllum 12 gr., sulphate of copper 1 dr., gentian 3 dr., oak bark 3 dr., chamomile 3 dr., syrup to form a ball; once or twice a day.

OINTMENTS, LINIMENTS, WASHES, ETC., FOR OUTWARD APPLICATION.

Blistering Ointments.—The Spanish flies should be finely powdered, and the heat moderate.

1. Lard 4 oz., common turpentine 1 oz., p. flies 1 oz.; melt the lard and turpentine, and stir in the powdered flies. Mr. YOUATT substitutes rosin for the turpentine

2. Venice turpentine and resin, of each 1 ℔, palm oil or lard 2 ℔; melt together and gradually stir in 1 ℔ of powdered flies.

3. Palm oil 4 ℔, resin 1 ℔; melt together, and stir in 1 ℔ of powdered flies.

4. *Mild.* Lard 4 oz., Venice turpentine 1 oz., p. flies 6 dr.

5. *Stronger.* Mercurial ointment 2 oz., oil of bays 2 oz., Barbadoes tar 1 oz., oil of rosemary 2 dr., p. flies 1 oz.

6. *Strong.* Oil of turpentine 1 oz., oil of vitriol 2 fluid dr.; mix in a basin, and add melted lard 6 oz., oil of origanum 1 oz., powdered flies 1 to 2 oz.

7. *Strongest.* Strong mercurial ointment 4 oz., oil of origanum ½ oz., finely powdered euphorbium 3 dr., p. flies ½ oz.

8. *Mercurial.* Common blister (No. 2, above) 4 oz., sublimate in fine powder ½ dr.; for splints, spavins, &c.

9. *For common purposes.* Lard 6 oz., Venice turpentine 4 oz., beeswax 2 oz., yellow resin ½ oz., oil of origanum ½ oz., powdered cantharides 3 oz. It may be softened in winter by rubbing it with a little turpentine.

10. Powdered flies 5 dr., lard 4 oz., oil of turpentine 1 oz.

11. *Mustard Blister.* Best flour of mustard 8 oz., water to form a paste. Others add 2 oz. of oil of turpentine, and 1 oz. pure water of ammonia.

Note.—The hair should be clipped closely, or shaved off, the part fomented with warm water, and the blistering ointment well rubbed in. In inflammation of the lungs, &c., blistering is more successful after bleeding. In 24 hours a little olive or neat's-foot oil should be applied, and repeated night and morning. The head should be tied up for the first 2 days, and the litter removed from the stable. If strangury is produced give plenty of linseed tea. The simplest blisters are perhaps the best for common purposes. Sublimate blemishes. *Sweating down* is effected by milder stimulants; for this purpose, the liquid blister is lowered by some mild oil, &c.

Composition for Sand-cracks.—Beeswax 4 oz., yellow resin 2 oz., common turpentine 1 oz., tallow ½ oz.; melt together; fill the cracks with the composition, and turn the horse out to grass.

Farcy Ointment.—Iodide 1 dr., lard 1 oz., mercurial ointment 1 oz., mix. Useful when the complaint is confined to one leg; from 5 to 10 grains of iodide of potassium being given daily, with a mineral tonic.

Hellebore Ointment.—Powdered white hellebore 1 part, lard 8 parts; an irritating dressing for rowels and setons.

Hoof Ointment.—Tar and tallow equal parts, melted together.

Hoof Ointments.—1. Equal parts of wax, olive oil, lard, veal, suet, turpentine, and honey; melt the wax and lard with the oil by a gentle heat, remove from the fire, and add the honey and turpentine, stirring till cold; when intended to embellish the hoof as well as to soften it, it may be colored with lamp-black or ivory-black.

2. Tallow 4 ℔, beeswax 4 oz., tar ½ ℔; melt slowly, remove from the fire, and when they begin to cool, stir together. A portion of pitch may be added when intended to fill fissures, &c.

Iodine Ointment.—(Simple). Iodine 1 part, lard 8 parts; mix.

Ointment for Warts.—Muriate of ammonia 2 dr., powdered savin 1 oz., lard 1½ oz.; to be applied daily.

Ointments for Farcy Buds.—1. Sublimate 1 oz., white arsenic ½ oz., yellow arsenic ½ oz., euphorbium ½ oz., oil of bays 4 oz.; mix.

2. (*Topique Terrat.*) Corrosive sublimate 1 oz., white and yellow arsenic each ½ oz., oil of bays 4 oz.; mix with a gentle heat.

Ointments for Mange and Lice.—1. Sulphur 4 oz., soft soap 4 oz., oil of bays 4 oz., train oil q. s.

2. Sulphur 1 oz., train oil 1 oz., Venice turpentine 2 oz.

3. Train oil 3 oz., sulphur 1 oz., oil of turpentine 6 oz.

4. Sulphur 8 oz., common turpentine 2 oz., strong mercurial ointment 2 oz., linseed oil 1 pint; rub the flowers of sulphur with a fourth part of the oil, then rub in the turpentine and ointment and gradually add the rest of the oil; half to be rubbed in daily for three days; on the sixth day, wash off with soft soap and warm water.

5. Oil of turpentine 3 oz., oil of vitriol 1 oz.; mix cautiously, avoiding the fumes, and add melted lard 8 oz., train oil 4 oz., oil of turpentine 2 oz., flowers of sulphur or sulphur vivum 4 oz.; stir till cold; apply daily for 3 or 4 times, and give an alterative powder twice a day.

6. Oil of bays 16 oz., strong mercurial ointment 6 oz., oil of turpentine 2 oz., soft soap 4 oz.: mix and apply in the sun; but it is not quite safe.

7. Oil of turpentine 4 oz., oil of tar 4 oz., train oil 8 oz., sulphur 4 oz.

8. Sulphur 4 oz., white hellebore ½ oz., oil of tar 3 oz., train or linseed oil 12 oz.

9. Soft soap and tar equal parts.

Ointments for Scurvy and Cracked Heels, and Confirmed Grease.—The inflammation should be first subdued by poultices. The milder preparations (which are here placed first) should be employed in the first instance, and afterwards those for confirmed grease.

1. For scurvy heels: Goulard's extract ½ dr., lard 1 oz., mix. The heel should first be gently rubbed with soap and water.

2. For scurvy or cracked heels: Sugar of lead ½ oz., oxide of zinc ½ oz., lard or palm oil 4 oz.

3. Melt together 3 oz. white diachylon, 4 oz. olive oil; mix, and when nearly cold, add 3 dr. of sugar of lead in fine powder. First wash the heel, then apply the Astringent Lotion No. 9, and afterwards this ointment; or, elder ointment 4 oz., camphor 6 dr., laudanum 2 dr. extract of lead 2 dr.; mix.

4. Melt yellow wax 2 oz., with sweet oil 8 oz., and add sugar of lead ½ oz.

5. Healing ointment for cracked heels: Lard 4 lb, resin 1 lb; melt together, and stir in 1 lb true calamine.

6. For cracked heels and grease: Alum 1 oz., turpentine 1 oz.; lard 3 oz.; melt the turpentine and lard, and stir in the powdered alum.

7. For grease: Venice turpentine 4 oz., wax 1 oz., lard 4 oz.; melt together, and add sugar of lead 1 oz. (or alum 2 oz.) in fine powder.

8. Lard, honey, common turpentine, each 8 oz.; melt together, and add powdered alum 6 oz., white vitriol 2 oz.

Ointments for sore Backs and Saddle-Galls.—1. Camphor 2 dr., oil of rosemary 1 dr., elder ointment or lard 3 oz.

2. Marsh-mallow ointment 4 oz., extract of lead 1 oz.

Ointments for Thrush and Canker.—1. Common verdigris ½ oz., calamine ½ oz., sulphate of zinc 1 dr., tar 3 oz.

2. Blue vitriol 2 oz., white vitriol 1 oz., rubbed down and mixed with lard 2 lb

tar 1 lb; a pledget of tow covered with it to be introduced into the cleft of the frog every night, and renewed in the morning.

3. *Thrush Paste.* Alum, blue vitriol, white vitriol, of each 1 oz.; rub them into a fine powder; melt 2 lb of tar with 1 lb of lard, and when getting cool, stir in the powder.

4 Verdigris 1½ oz. (or burnt alum 8 oz.), red lead 8 oz., molasses 4 lb; boil to a proper consistence, and add 1 oz. of nitrous acid.

5. Barbadoes tar 4 oz., sulphuric acid ½ oz.

6. *In Canker.* Tar 4 parts, nitric acid 1 part; mix.

Ointments to Promote the Growth of the Hair, and remove the blemish from broken knees.

1. Camphor ½ dr., oil of rosemary 1 dr., weak mercurial ointment 1 oz., ivory-black and bole to color.

2. Poplar-bud ointment and honey, applied twice a day for 15 or 20 days.

3. Calamine 2 dr., prepared charcoal 1 dr., oil of turpentine 1 dr., lard 4 dr.; rub well together with 1 dr. of blister ointment.

4. Liquid blister (No. 3, 6, or 7) 1 dr., ivory-black 1 dr., camphor 1 dr., palm oil 1 oz.

5. Citrine ointment 1 oz., camphor 1 dr., color as above.

Simple Emollient Ointments.—1. *Simple Cerate.* Olive oil 1 pint, beeswax 4 oz.

2. *Spermaceti Ointment.* Lard 12 oz., white wax 2 oz., spermaceti 1 oz.

Stopping for the Feet.—1. Cow-dung beaten with a fourth part of clay.

2. Soft soap 4 oz., Barbadoes tar 16 oz., linseed meal 2½ lb.

3. Tallow and tar, equal parts, melted together.

4. Common tar 2 parts, soft soap 1 part, linseed meal q. s. To be spread over the sole of the foot ¼ of an inch thick, covered with a layer of tow, and a leather sole over all.

Turpentine Ointment.— Common turpentine 1 part, lard 3 parts; melt together.

Verdigris Ointment.— Verdigris in powder 1 part, common turpentine 1 part, lard 12 parts: for foul ulcers and tarsal ophthalmia.

Detergent Liniments.—1. Oil of turpentine 1 oz., oil of vitriol 2 dr. by measure; mix in a large gallipot, and when cool, add 2 oz. of linseed oil.

2. *Ægyptiacum.* Bruised sulphate of copper 12 oz., vinegar 4 lb, molasses 3 lb: place over a clear fire, and let it boil up.

3. *Wash for Grease.* Sulphate of copper 2 dr., and alum 2 dr. in water 1 pint.

Liniment for Bog Spavin.— Mercurial ointment 2 oz., oil of cantharides 4 dr.

Liniment for Brittle Hoof.— Oil of tar 1 pint, fish oil 2 pints.

Liniment for Canker of the Foot and bad Thrushes.—1. Barbadoes tar 1 oz., oil of turpentine 1½ oz.; mix carefully, and add oil of vitriol 1 dr.

2. Butter of antimony alone.

3. Crystallized verdigris in fine powder 1 oz., honey 2 oz., bole and alum of each ½ oz., vinegar to form a liniment; to be mixed over a gentle fire. Greasy applications are to be avoided.

Liniment for Sore Backs.— Extract of lead ½ oz., vinegar 1 oz., olive oil 2 oz.

Liniments for Itching Humors, Mange, Lice, etc.—1. Equal parts of oil of tar, oil of turpentine, and seal oil. Apply every second day for 2 or 3 times, then wash.

2. Sulphur 4 oz., turpentine 4 oz., oil of tar and train oil 6 or 8 oz. The parts to be first washed with soft soap, and dried.

3. For lice: Sublimate 1 dr., muriatic acid 3 dr., tobacco water 2 pints, oil of turpentine 4 oz

4. *Liniment for Mange.* Goulard's extract of lead 2 oz., olive or rape oil, 2 oz. sulphur 1 oz.

Miscellaneous Liniments and Mixed Oils.— *Creasote Liniment.* Creasote 2 oz., oil of turpentine 4 oz., olive oil 4 oz.; mix: in fistulous sores, unhealthy wounds, &c.

Goulard Liniment. Extract of lead 1 oz., olive oil 4 oz. For excoriated surfaces, etc.

Saturnine Balsam. Acetate of lead 1 oz., oil of turpentine 2 oz.; digest with a gentle heat.

Drying Liniment. Linseed oil and spirit of wine, of each equal parts.

Marsh-mallow Liniment. Olive oil and marsh-mallow ointment, of each 4 oz.; melt the ointment and add the oil.

Emollient and Anodyne Liniment. Neat's-foot oil 4 oz., poplar ointment, marsh-mallow ointment, of each 2 oz.

Lime-water Liniment. Lime-water 8 oz., olive or linseed oil 2 oz.

Narcotic Liniment. Olive oil 4 oz., laudanum 2 oz.

Liniment for Confirmed Grease. Verdigris, sugar of lead, of each ¼ oz., honey 1 oz.; mix.

Compound Iodine Liniment. Iodine 1 oz., soap liniment 8 oz.

Turpentine Liniment. Equal parts of turpentine and olive oil.

Resolvent Liniment. Olive oil 2 oz., strong mercurial ointment 2 dr., water of ammonia 2 dr.

Oils for Mange. Oil of turpentine 1 pint; add to it very gradually and cautiously 2 oz. oil of vitriol, stirring the mixture constantly, then add a quart of linseed oil; from 4 to 8 oz. to be rubbed in with a brush every second day, for three or four times.

Stimulating Liniments.—1. Soft soap 4 oz., camphor 1 oz., proof spirit 2 pints, water of ammonia ½ pint.

2. Sweet oil 2 oz., spirit of hartshorn 1 oz., oil of turpentine ½ oz.

3. Common oil 6 oz., liquid blister 2 or 3 oz.: in chronic sprains.

4. *Soap Liniment.* Soft soap 4 oz., water 8 oz.; dissolve, and add 1 pint of rectified spirit, in which is dissolved 2 oz. camphor, 1 oz. oil of rosemary, and 2 to 4 oz. strong water of ammonia.

5. For splints: Oil of origanum 1 oz., spirit of turpentine 1 oz., spirit of wine ½ oz. To be applied night and morning for a few days, discontinuing it as often as any moisture appears.

6. For the same purpose: Oil of origanum ½ oz., oil of turpentine ½ oz., camphorated spirit of wine 2 oz.

7. For sprains, old swellings, rheumatism, &c.: Spirit of hartshorn 2 oz., camphorated spirit 2 oz., oil of turpentine 1 oz., laudanum ½ oz., oil of origanum 1 dr.

8. Camphorated oil 4 oz., oil of turpentine 1 oz., oil of origanum 1 dr.

9. For callous swellings after bruises: Soap liniment 4 oz., camphor 2 dr., water of ammonia 1 oz.

10. For indolent tumors: Mercurial ointment 2 oz., olive oil 2 dr., camphor 2 dr.

11. Olive oil 4 oz., water of ammonia 2 oz., oil of turpentine 2 oz.

12. For strains: Barbadoes tar 2 oz., spirit of turpentine 2 oz., opodeldoc 4 oz.

13. Oil of turpentine 2 parts, muriatic acid 1 part.

14. Camphorated oil 4 parts, oil of turpentine and tincture of cantharides, of each 2 parts, acetic acid 1 oz.

15. *Turpentine Liniment.* Equal parts of oil of turpentine and oil. Digestive and rubefacient.

16. *Compound Turpentine Liniment.* Soft soap 4 oz., camphor 1 oz., oil of turpentine 16 oz.; mix.

Astringent Lotions, for drying up sores and diminishing their discharge (especially in grease and scratched heels), after the inflammation has been subdued by linseed or carrot poultices.

1. Alum 4 oz., boiling water 1 pint, for grease and cracked heel.

2. Alum 2 dr., sulphate of zinc 1 scruple, water 1 pint.

3. Mild, for cracks: Sugar of lead 2 dr. sulphate of zinc 1 dr., infusion of oak bark 1 pint.

4. For confirmed grease: Nitric acid 1 oz., water 8 oz.

5. Strong: Blue vitriol ¼ oz., alum 3 dr., water 1 pint.

6. Sugar of lead 1 oz., blue vitriol 1 oz., water 1 quart.

7. Lime-water 16 oz., spirit of camphor ½ oz., sugar of lead 1 dr.

8. Sulphate of iron 2 oz., alum 2 oz., vinegar 8 oz., water 3½ pints.

9. Tincture of myrrh 1 oz., camphorated spirit 1 oz., distilled vinegar and water each 2 oz.

Cooling Lotions, for external inflammation.

1. Sal ammoniac 1 oz., nitre 2 oz., water 16 oz. To be used as soon as made.

2. Goulard's extract of lead 1 oz., vinegar 2 oz., camphorated spirit 3 oz., water 16 oz.; for recent spavin.

3. Goulard's extract 2 dr., spirit 2 dr., soft water 1 pint.

4. *Saturnine Lotion.* Sugar of lead 1 oz., vinegar and water 1 pint.

5. Liquor of diacetate of lead 1 dr., spirit of nitric ether 1 dr., water 2 pints. In slight rubs and bruises.

Detergent Lotions, for foul ulcers.

1. Sulphate of copper 1 oz., sulphuric acid 12 drops, water 4 oz.

2. Sulphate of copper 2 dr., water 1 pint: for stimulating old ulcers.

3. Sulphate of copper 1 oz., water 1 oz.: to remove fungous granulations.

4. Nitrous acid 1 oz., quicksilver ½ oz.; dissolve, and add water 8 oz.

Lotions, for dispersing indolent tumors, and saddle-galls, and for chronic strains, etc.

1. Mindererus' spirit 4 oz., camphorated spirit 4 oz., water 16 oz.

2. Sal ammoniac 1 oz., vinegar 8 oz., camphorated spirit 1 oz.

3. For saddle-galls and warbles: Goulard's extract 2 dr., distilled vinegar 3 oz., spirit of wine 4 oz.

4. Muriate of ammonia ½ oz., muriatic acid 2 dr., water 8 to 12 oz.; for saddle-galls and windgalls.

5. *Saline Embrocation.* Sal ammoniac 8 oz., vinegar 3 pints.

6. Mindererus' spirit 2 oz., soap liniment 2 oz.

7. Strong solution of salt 1 oz., tincture of myrrh ¼ oz., for saddle-galls.

8. Common salt 4 oz., vinegar ½ pint, cold water 1 quart, spirit of wine and laudanum, each 1 oz.: in incipient poll-evil.

9. For strains: Bay salt ½ lb, sal ammoniac 2 oz., sugar of lead ¼ oz., vinegar 1½ pint, water 1 pint.

Lotions for Mange, etc.—1. White hellebore 2 oz., tobacco 2 oz., water 3 pints; boil, strain, and add, when cold, a pint of fresh lime-water.

2. Boil 4 oz. of white hellebore in 3 pints of water to 2 pints, and add corrosive sublimate 2 dr., previously dissolved in 3 dr. of muriatic acid.

3. Boil 2 oz. of tobacco in a quart of water, strain, and add common salt 3 oz., soap 2 oz.

4. Liver of sulphur 2 oz., water 1 quart.

5. Liver of sulphur 4 oz., soft soap 16 oz., water 2 gallons.

6. Acid nitrate of mercury 2 dr., distilled water 16 oz.

Lotion of Nitrate of Silver. For the same: Nitrate of silver 10 gr., distilled water 1 oz.

Lotion for Farcy. Dissolve 1 oz. of sulphate of iron in a quart of water, and add ½ oz. of oil of vitriol.

Styptic Lotion, for Stopping Bleeding. Alum 2 oz., sulphate of zinc 2 dr., water 1 quart.

Catechu Lotion for Ulcers of the Mouth. Infuse 2 oz. of catechu in a quart of boiling water for an hour; strain and add 1 oz. of spirit of wine. (For saddle-galls add 4 oz. of tincture of catechu and 8 oz. common salt.)

Lotion of Chloride of Lime. To chloride of lime 1 lb add gradually 1 gallon of water; mix, and filter or decant: for mange, and as a stimulant to unhealthy wounds and fistulous sores. Diluted with 10 or 15 parts of water, it is used as a lotion for grease, exfoliated bones, &c., and is a disinfectant for foul stables. For ulcers of the tongue, mix 1 dr. of chloride of lime with a pint of water: for mange, 4 dr. to a pint.

Wash for destroying Lice about the Legs. Corrosive sublimate 1 dr., muriatic acid 3 dr., tobacco-water 1 quart, oil of turpentine 4 oz.

Alum Mouth Wash. Alum 2 dr., sage tea a quart.

For Bruised Gums. Alum 2 dr., tincture of myrrh 1 oz., honey 1 oz., water 2 oz.

Embrocations, Various.— *Embrocation for Strains.* 1. Soft soap 1 oz., spirit of wine 4 oz., oil of rosemary 2 dr., camphor 2 dr.

2. For strains in the shoulder: oil of turpentine 1 oz., camphorated spirit 2 oz.

3. Equal quantities of soft soap, oil of turpentine, spirit of wine, and elder ointment.

4. Soft soap 2 oz., oil of bays 1 oz., water of ammonia 1½ oz., oil of origanum ½ oz.

5. Barbadoes tar 2 oz., spirit of turpentine 2 oz., opodeldoc 4 oz. After fomenting with hot vinegar and Goulard.

Mustard Embrocations. 1. Mustard flour 4 oz., water of ammonia 1½ oz., oil of turpentine 1 oz., water enough to bring it to the consistence of cream.

2. Camphor 1 oz., oil of turpentine 2 oz., water of ammonia 2 oz., flour of mustard 8 oz., water to form a thin paste.

Collyria, or Eye-waters.— 1. Acetate of lead, and sulphate of zinc, each ½ dr. to 1 dr.; dissolve them separately in ½ pint of water; mix, and filter.

2. Sugar of lead 10 to 20 grains, water 8 oz.

3. Acetate of ammonia 3 oz., rose-water 6 oz.

4. Sugar of lead 2 dr., vinegar ½ oz., soft water 16 oz., rose-water 4 oz.

5. Infuse 1 oz. of foxglove in 2 pints of boiling water, and strain.

6. Tincture of opium 2 dr., water 8 oz., extract of lead 1 dr.

7. Brandy 1 oz., vinegar 1 oz., tincture of opium 2 dr., rose-water 8 oz.

8. Extract of henbane 1 dr., water 8 oz.

9. Common salt ½ dr., water 6 oz.

10. *For Watery Bloodshot Eyes.* Burnt alum 1 oz., calcined white vitriol 1 oz., boiling water 3 pints.

11. *Emollient.* Infusion of marsh-mallow leaves or flowers 1 quart, starch (rubbed smooth with a little water) ½ oz.; mix and boil. To be used warm.

12. *Astringent.* Alum 2 dr., whites of 2 eggs, water ¼ pint; mix in a mortar.

13. Tincture of digitalis ½ oz., soft water 8 oz.

14. *To remove Opacity of the Cornea.* Nitrate of silver 10 gr., distilled water 1 oz. 1 or 2 drops to be dropped in the eye.

15. *For Cloudiness of the Eye.* Sublimate 4 gr., spirit of wine 20 drops; rub together, and add soft water 4 oz. A few drops to be introduced into the eye 3 or 4 times a day.

16. *Stimulating.* Infusion of elder flowers 16 oz., brandy 2 oz.

17. *Alum Collyrium.* Decoction of marsh-mallow 16 oz., alum 2 dr., camphorated spirit 1 dr.; mix. To be used toward the decline of inflammation.

18. *Tannin Collyrium.* Dissolved 1 dr. of tannin in 13 oz. of water, and add 3 oz of cherry-laurel water.

19. Sulphate of zinc 8 gr., water 4 oz. In chronic inflammation.

20. In *Specific Ophthalmia.* Tincture of opium 2 dr., extract of belladonna 1 dr., with distilled water 1 pint.

Poultices.— These are useful in reducing inflammation and relieving pain. They should not be used too hot, nor applied too tightly, especially to the feet.

Anodyne Poultices. 1. Boil poppy-heads in water, strain, and add linseed meal to stiffen it.

2. Sprinkle the surface of a simple poultice with laudanum.

Charcoal Poultices. 1. Oatmeal ½ pint, linseed meal ½ pint, charcoal 4 oz., beer grounds q. s.

2. Carrots scraped, or carrots boiled, with charcoal powder q. s. *Anti-septic.*

Chlorine Poultice. Chloride of lime ½ oz., water 1 pint, linseed meal q. s.: to grease, when offensive.

Cleansing Poultice. Mashed turnips, not pressed, with enough linseed meal, or oatmeal, to give them consistence; or, the charcoal poultice above.

Common Poultices. 1. Bran moistened with hot water, and as much linseed meal added as will give it tenacity.

2. Boil a quart of bran for ten minutes with enough water to make a thin mash, then add to it 4 oz. of linseed meal: apply it in a flannel bag.

3. Fine bran 3 parts, linseed meal 1 part, hot water q. s.

Drawing Poultices. 1. Boil 2 ℔ of chopped onions in water, and add to it the crumb of a 4 ℔ loaf.

2. Sorrel boiled and squeezed 4 parts, onions baked in ashes 1 part, basilicon ointment 1 part; mix, and apply warm.

Mustard Poultice. 1. Mustard flour and linseed meal, equal parts; mix with sufficient hot vinegar to give a proper consistence.

2. Flour of black mustard 3 ℔, hot vinegar, or water, q. s.

Poultices for Grease. 1. The herb cleavers (or goose-grass) beaten to a paste.

2. Mash bread and boiled turnips with stale beer, and stir in 1 oz. flour of mustard, turpentine 2 oz., linseed meal 2 oz., lard 6 oz.; night and morning.

Resolvent Poultices. 1. Rye meal 8 oz., prepared chalk 2 oz., vinegar 10 oz.; mix, warm, and stir, till no more gas is disengaged; apply warm.

2. Linseed meal 12 oz., powdered hemlock 4 oz., muriate of ammonia 4 oz., vinegar q. s.: to indolent glandular tumors.

Rubefacient Poultice. 1. Fresh horseradish root, grated, and immediately applied.

2. *Stronger.* Old yeast 2 ℔, flour of black mustard 1 ℔, euphorbium powder 4 oz. vinegar q. s.; mix, and apply cold.

Yeast Poultices. 1. Linseed meal, oatmeal, boiling water, q. s.; mix, and ferment with a table-spoonful of yeast; in old grease with an offensive smell.

2. In gangrene: add 2 oz. of turpentine to the last.

MEDICINES FOR NEAT CATTLE.

DRINKS OR DRENCHES.

[NOTE. — The peculiar structure of the digestive organs in cattle renders it proper to give their medicines in a liquid form. For the same reason drenches should be given very slowly, so as to enter at once the third or fourth stomach. It is only in cases of (hoven) *blown*, or distended paunch, that it is desirable to introduce medicine into the first stomach, or *rumen*.]

Alterative Powders. — 1. Sulphur 4 oz., black antimony 1 oz., Æthiops mineral ½ oz., nitre 2 oz.; mix, for 4 doses: to be given daily in gruel.

2. *Alterative Tonic.* Add to the last 2 oz. gentian and 1 oz. ginger; and make 6 doses.

Alum Whey. — Boil ½ oz. of alum in 2 quarts of milk for ten minutes, and strain.

Anodyne Carminative Tincture; and Tincture of Pimento. See MEDICINES FOR HORSES.

Anti-spasmodic Drench for Locked-Jaw. — Camphor 1 dr. (rubbed with spirit), powdered opium 1 dr., thick gruel ½ pint.

Astringent Drenches, for dysentery (scouring rot) or lax.

1. After purging drenches: Prepared chalk 2 oz., oak bark 1 oz., catechu ½ oz., opium 2 scruples, ginger 2 dr., warm gruel 1 quart.

2. Two quarts of alum whey.

3. First give blue pill 2 or 3 dr., rhubarb 3 dr., castor oil 4 oz., gruel 1 pint, well stirred before giving it; repeat this 3 or 4 mornings; then give thick starch (made with 4 oz. of starch) 3 or 4 pints, tincture of opium 2 dr., ginger 3 dr., catechu ½ oz.

4. Mutton suet 1 lb, new milk 2 quarts; boil, and add opium ½ dr., ginger 1 dr.

5. *Cordial Astringent Drench.* (After the laxative drench No. 2.) Catechu ½ oz., allspice ¼ oz., caraways ½ oz., ale ½ pint, water ½ pint.

6. Decoction of sloes, with prepared chalk.

7. Decoction of wormwood a quart, gum Arabic 2 oz., aromatic confection 1 oz., catechu 2 dr.; with linseed tea, repeated every 6 days for 3 times.

8. Sheep's heart, liver, and lights, all chopped up together.

Cleansing Drinks, for cows after calving. These are often applied for, but are condemned as useless or hurtful by veterinarians of the new school. The following are some of the forms in use; probably a gentle laxative would be in most cases preferable:

1. Spermaceti, Irish slate, and birthwort, in powder, of each 1 oz., powdered aniseed 2 oz., liquorice powder 2 oz.; in linseed tea.

2. Aniseed, myrrh, birthwort, allspice, cumin seed, of each 1 oz., in a quart of gruel.

3. Juniper berries 3 oz., birthwort 2 oz., fœnugreek 1 oz., spermaceti 2 oz., antimony 1 oz., saffron ½ oz., in a quart of warm ale.

4. Resin, soap, of each ½ oz., spermaceti ½ oz., aniseed, caraway seed, of each 1 oz., ginger ½ oz., molasses 4 oz., warm gruel a quart.

5. 1 oz. spermaceti, 1 oz. birthwort, 2 oz. powdered bay-berries, 1 oz. myrrh; in juniper-berry tea.

Cordial Carminative Drenches. — Drenches for indigestion, and colic without inflammation.

1. In indigestion: Salt 3 or 4 oz., carbonate of soda 2 dr., ginger ½ dr., anodyne tincture (below) 2 oz., water 10 or 12 oz.

2. The same: Aloes 4 dr., common salt 4 oz., ginger 2 dr., anodyne tincture 2 oz., q. s.

3. In colic: Salt 4 oz., aloes 3 dr., ginger 1 dr., opium ½ oz., water 1 pint, peppermint water 1 pint.

4. *Carminative.* Oil of turpentine 1 oz., tincture of opium 6 dr., spirit of nitric ether 2 oz., water 1 pint.

5. *Warm Cordial.* A bottle of red wine, extract of juniper 1 oz., powdered cinnamon ½ oz.

6. *Mild.* Peppermint 2 oz., chamomiles ½ oz., hot water 5 pints; infuse, and give while warm.

7. Chamomile 2 oz., aniseed 1½ oz.; infuse in hot water, and strain; when cold, add ether 2 oz.

Diuretic Drinks. — 1. Common turpentine ½ oz., ginger 2 dr.; mix with a little molasses, and add gradually spirits of nitrous ether 1 oz., gruel a pint.

2. *Tonic Diuretic.* Common turpentine 4 dr., ginger 2 dr., gentian 2 dr., tartrate of iron 1 dr.; rub together with a little molasses, and add gradually 1 oz. of sweet spirit of nitre.

Drench for Strangury. — After laxatives and a clyster, give camphor 2 dr., spirit of nitrous ether ½ oz., tincture of opium ½ oz., nitre 1 oz., gruel a pint.

Drench for the Bites of Vipers. — Olive oil 2 pints, spirits of hartshorn 1 oz.; mix.

Drenches for Bloody Urine. — Bloody Urine and Red-water are often confounded, but are different diseases, and require a different treatment. Bloody Urine is distinguished by the presence of actual blood in the urine, in a state of coagulation, and by great tenderness across the loins. It generally occurs in oxen of good condition. It is to be treated by bleeding, purgatives, stimulating applications to the loins, emollient drinks and opiates. After bleeding, give one of the following drenches:

1. Epsom salts 6 to 8 oz., water a quart, castor oil 4 to 6 oz. Or,

2. Linseed oil 1 pint, gruel 1 pint, caraways 2 dr., Epsom salts 8 oz. (in warm water ½ pint), tincture of opium 2 dr. Or either of the laxative drenches for red-water, page 37.

3. After the above, when the pain and difficulty have abated, but the water continues bloody, give — Catechu 2 dr., opium ½ dr., alum 3 dr., gum Arabic ½ oz., water ½ pint; simmer for a few minutes, and add ½ pint of ale. Repeat if required.

4. In obstinate cases: Oil of juniper ½ oz., oil of turpentine 1 oz., laudanum 1 oz., in a pint of linseed tea; at first twice, and afterward once a day.

Drenches for Hoven or Blown (flatulent distension of the paunch). It appears doubtful whether any liquid enters the paunch in these cases. More dependence is now placed on the introduction of a tube constructed for the purpose.

1. Ginger ½ oz., spirit of nitric ether 2 oz., oil of peppermint 30 drops, warm water a pint.

2. Liquid ammonia, or spirit of hartshorn, ½ oz. to 1 oz., cold water 3 pints.

3. Chloride of potash 4 dr., warm water 4 oz., ether 3 dr. The solution of chlorinated soda may be substituted for chloride of potash.

4. Aloes 3 dr., pimento 2 dr., oil of turpentine 2 oz., spirit of hartshorn 1 oz., in gruel or warm water.

5. Chloride of lime 2 dr., water a quart. Administer it by means of a stomach-pump, and repeat in an hour if required.

Drenches for Inflammation of the Liver. — After bleeding give —

1. Calomel 1½ dr., opium ½ dr., ginger 2 dr., thick gruel q. s. Six hours afterward give Epsom salts 1 ℔, sulphur 6 oz., linseed oil ½ pint, gruel q. s.

2. Epsom salts 1 ℔, caraway ½ oz., Barbadoes aloes ½ oz.; in a quart of warm gruel. After the yellowness appears, give —

3. Half of No. 2, with 20 gr. of calomel morning and night.

Drenches for Jaundice or Yellows. — 1. Opium 10 gr., calomel 10 gr., thick gruel q. s., at night, and the tonic drink (No. 2) in the morning.

2. Mr. SPOONER says salts in ½ ℔ doses, with a little ginger, are generally sufficient.

3. Muriate of soda ½ oz., carbonate of soda ½ oz., turmeric 2 oz., Glauber's salts 6 oz., powdered gentian and chamomile 2 dr., gruel q. s.

4. Castile soap ½ oz., Venice turpentine ½ oz., ginger 3 dr., gentian 1 oz.; rub the soap and turpentine in a mortar, and gradually add a pint of water, and afterward the ginger and gentian.

5. Castile soap 1 oz., salt 1 oz., Venice turpentine 1 oz., yolks of two eggs; mix together, and gradually add a strong decoction of barberry bark.

6. Powdered cumin seed, aniseed, and turmeric, each 2 oz., grains of Paradise and salt of tartar, each 1 oz.; mix. Slice 1 oz. of Castile soap, to mix with 2 oz. of molasses. Pour a quart of boiling ale upon all the ingredients, and administer when lukewarm. To be repeated two or three times a day.

Drenches for Red-Water. — This commonly attacks milch cows, and appears generally to arise from the nature of the pasture. Moderate bleeding is recommended, but is less necessary than in hæmaturia. Laxatives should then be given.

1. Epsom salts 8 to 12 oz., sulphur 2 to 4 oz., carbonate of ammonia ½ oz., ginger ½ oz., warm water 4 pints; give a fourth part every six hours till the bowels are acted on. Or,

2. Glauber's salts 12 oz., carbonate of soda ½ oz., nitre ½ oz., sugar 1 oz., powdered caraways ½ oz., in a quart of gruel. Or the Purging Drenches, Nos. 1, 2, or 3. After the bowels are well opened, give astringents or mild stimulants.

3. The laxative drench, No. 10, page 39. This is WHITE'S drench for red-water, No. 1. To be followed by drenches of whey.

4. *Astringent.* Powdered oak bark ½ oz., catechu 2 dr., opium 10 gr., gruel 1 pint.

5. Catechu 2 dr., mucilage 4 oz., lime-water 6 oz.

6. After laxatives: Ginger, gentian, each 1 dr., spirit of nitrous ether 1 oz., gruel q. s.; twice a day.

7. Powdered oak-bark 1 oz., charcoal 1 oz., bole 2 oz., in a quart of new milk.

8. Catechu 1½ oz., alum 1½ oz., diapente 2 oz., Locatelli balsam 2 oz., warm gruel 3 pints.

9. Dragon's blood 2 oz., rust of iron 1 oz., nitre 3 oz., oil of turpentine 2 oz.; mix; for 2 doses, in gruel.

10. Sulphuric acid 1 dr., tincture of opium ½ oz., molasses 4 oz., warm gruel 4 quarts; daily, for a week.

Drenches for the Epidemic, affecting the feet and mouth, and attended with a low fever.

For treatment of the Cattle Plague:

1. Glauber's salts 1 ℔, molasses 4 oz., sulphur 4 oz., aniseed ½ oz., cream of tartar 2 oz., warm water 3 pints; give it new-milk warm. The above is for a full-grown beast. The mouth to be washed with a strong solution of blue vitriol, burnt alum, and vinegar. If the feet crack, apply a mixture of equal parts of muriatic acid and water.

2. Some cattle-men give common salt in gruel, with great success.

3. After a mild dose of salts: sweet spirits of nitre 1 oz., ale yeast 6 or 8 oz.

4. Epsom salts 8 oz., sulphur 2 oz., nitre ½ oz., ginger ½ oz.; half of this to be given

in warm water, with 1 oz. of sweet spirits of nitre. Repeat daily. When the bowels are properly relaxed, and the fever reduced, but much weakness remains, give the following:

5. *Tonic Drench.* Gentian 4 dr., ginger 2 dr., sulphate of iron 2 dr., sweet spirits of nitre 1 oz., warm water, q. s.; wash the mouth with a lotion; dress the feet, after paring and poulticing, with equal parts of tincture of myrrh and butter of antimony, and afterward apply an astringent powder.

6. Linseed oil a pint, oil of turpentine 8 oz., aloes ½ oz., ginger ½ oz., laudanum 1 oz.; mix. For 2 doses, to be given with gruel.

Drink for Acute Diarrhea. — Sulphate of soda, sulphate of magnesia, of each 2 oz., ipecacuanha ½ dr., sulphate of iron 6 gr.

Drink for Chronic Diarrhea. — Calomel ½ dr., aloes 1 dr., gentian 2 dr., opium 5 gr., decoction of chamomiles 1 pint.

Drying Drenches, for drying a cow's milk. Bleed the night before, and give the drink, warm, in the morning.

1. Boil 6 dr. of alum in milk, and strain.

2. Alum 6 ℔, bole 2 ℔, cream of tartar or red tartar 1 ℔; mix. Give from 6 to 9 oz., in stale beer; or in gruel with ½ pint of vinegar.

3. Roche or common alum 4 oz., dragon's blood ½ oz., turmeric ½ oz., in a pint of rennet-water, and a pint of vinegar. [These large doses of alum, though often given, are not regarded as necessary or proper by modern veterinary writers.]

Expectorant and Cough Drenches, in Hoose or Catarrh. — 1. Bruised liquorice 2 oz.; boil in a quart of water to a pint, strain, and add powdered squill 2 dr., gum guaiacum 1 dr., tincture of tolu 4 dr., honey 2 oz.

2. Balsam of sulphur 2 oz., Barbadoes tar 1 oz., yolks of 2 eggs, honey 4 oz., salt of tartar ½ oz., oil of aniseed 1 dr., elecampane 1 oz., gruel 1 quart: in chronic coughs.

3. Fresh squill 2 oz., garlic 2 oz., vinegar 24 oz.; digest for a day with a gentle heat, strain and press, and boil the liquor with 24 oz. of molasses; for 6 doses, in chronic cough.

4. For recent coughs: Digitalis 20 gr., emetic tartar ½ dr., nitre 3 dr., squill 1 dr., opium 20 gr., gruel 1 pint.

5. Boil 4 oz. Iceland moss and 1 oz. liquorice root in 4 quarts of water for a quarter of an hour, and strain; add to the liquor 1 oz. nitre, cream of tartar 2 oz. In hoose from cold, if inflammation of the lungs and fever be present, bleed before giving the drink. See also FEVER DRENCHES.

If the disease be connected with worms in the air-passages, give the following:

Worm Drench. For cough from worms: Oil of turpentine 2 oz., sweet spirit of nitre 1 oz., laudanum ½ oz.; mix, and give in a pint of gruel.

Febrifuge Tonic Drenches. — 1. Antimonial powder ½ dr., camphor 1 dr., Peruvian bark 1 oz., gruel, or decoction of arrowroot or starch, q. s. for 2 doses.

2. In the decline of fevers and influenza: Emetic tartar ½ dr., nitre 2 dr., gentian 3 dr., chamomile 1 dr., ginger ½ dr.; pour on them a pint of boiling ale, and give when cool.

3. Emetic tartar ½ dr., gentian 2 dr., digitalis ½ dr., nitre ½ oz., spirit of nitric ether 4 dr., gruel q. s.

Fever Drenches, for fevers, colds, influenza, etc.

1. Tartar emetic 1 dr., digitalis ½ dr., nitre 3 dr.; mix, and give in a quart of gruel: in simple colds or catarrh.

2. Antimonial powder 2 dr., opium a scruple; rub together, and mix with thick gruel: after bleeding, in inflammation of the bladder.

3. In influenza, or epidemic colds: Nitre ½ oz., salt of tartar 1 oz., camphor 2 dr.,

valerian, liquorice, turmeric, of each 1 oz., mustard 2 oz., juniper berries 1 oz., gruel a quart.

4. For the same: After bleeding and a laxative, give antimonial powder 2 dr., camphor 1½ dr., ginger 3 dr., laudanum ½ oz., in gruel.

5. In bad colds attended with fever: Nitre 1 oz., camphor ½ dr., tartar emetic ½ dr., in gruel.

For the Distemper. — Warm tar-water is much recommended by some. It should be given in doses of 3 quarts 3 or 4 times a day, gradually diminishing the quantity.

Laxative Drink after Calving. — Epsom salts 12 oz., aniseed 1 oz., olive oil 6 oz., gruel a pint, or q. s.

Masticatories. — 1. Bruised garlic 4 cloves, salt a table-spoonful, ground pepper 1 oz., honey 4 oz. Boil for a short time in a glass of vinegar, immerse in it a piece of linen, and roll it up. Keep it in the animal's mouth for an hour, night and morning. *Anti-putrescent;* in epizootic maladies, and in ulcers of the mouth.

2. Bruised mustard and pepper, each ½ oz., rolled up in linen, and sprinkled with vinegar: to be kept in the mouth not more than half an hour, morning and evening, in epizootic diseases.

Murrain Drenches. — 1. Sweet spirit of nitre ½ oz., laudanum ½ dr., solution of chloride of lime 2 dr., prepared chalk 1 oz., mix, and give in a pint of warm gruel.

2. Cascarilla powder 2 oz., spirit of nitrous ether ½ oz., liquid acetate of ammonia 4 oz., beer yeast 8 oz.; every 4 hours.

3. Opiate confection 1 oz., liquid acetate of ammonia 2 oz., water 1 quart; for one dose.

4. *Tonic.* Calumba 2 dr., canella 2 dr., ginger 1 dr., sweet spirit of nitre ½ oz. thick gruel 1 pint.

5. *Ceylon Remedy.* A small piece of lard the size of a walnut. Said to be used with perfect success.

6. *To Prevent Murrain.* Myrrh 1 oz., Epsom salts 2 oz., sulphur 1 oz., liver of antimony ½ oz., diapente 1 oz.: in rue tea after bleeding.

Purging and Laxative Drenches. — These are given when fever exists, or is threatened; to prevent downfalls of the udder; after calving, to prevent milk-fever; to remove undue accumulations in costiveness; in the first stage of red-water, and jaundice; and in all inflammatory complaints.

1. Epsom salts 8 oz., sulphur 4 oz., ginger 2 dr., warm water a pint, linseed oil 12 oz.

2. Epsom salts 6 or 8 oz., castor oil 8 oz., gruel 1½ pint, ginger ½ oz.

3. Glauber's or Epsom salts 16 oz. (or in bad cases with fever 24 oz.), caraways 1 oz., warm gruel a quart.

4. To No. 3, add 2 or 3 dr. of gamboge, or 4 dr. of aloes.

5. Sulphur 8 oz., ginger ½ oz., warm gruel a quart: in rheumatism, or joint-felon.

6. Common salt 6 oz., flour of mustard a table-spoonful, grated ginger or ground pepper, of either a tea-spoonful, gin ¼ pint, water 2 pints.

7. Common salt 1 lb, warm water, or gruel, q. s. The last three are only proper where there is not much fever.

8. *In Red-Water.* Sulphate of magnesia 8 to 16 oz., sulphur 2 to 6 oz., carbonate of ammonia ½ oz., ginger ½ oz., warm water q. s.; a fourth of this every 6 hours till the bowels are sufficiently acted on.

9. *When the last does not operate.* Podophyllin 20 gr., yeast ½ pint.

10. Aloes 4 to 6 dr., common salt 4 to 6 oz., ginger 1 to 3 dr., water a quart, and anodyne tincture 2 oz.: in red-water.

11. *Cordial Purgatives.* Aloes 4 dr., Epsom salts 4 oz., ginger 1 dr., carminative tincture 2 oz., water 1 quart.

12. In the commencement of puerperal or milk-fever: Epsom salts 6 or 8 oz. powdered croton seeds 20 to 30 gr., ginger 4 dr.; in 3 or 4 pints of gruel: repeat in 6 hours, if required, without the croton seeds.

13. In locked-jaw: Barbadoes aloes 1½ oz., powdered croton kernel 10 gr., boiling water q. s.; given when cool.

14. *Mild Laxative and Tonic.* Epsom salts ½ ℔, sulphur 4 to 6 oz., ginger ½ oz. gentian ½ oz., warm water q. s.

15. In flatulent colic with costiveness: Aloes 1½ oz., carbonate of potash 3 dr., ginger ½ oz., warm water 1 pint, linseed oil 8 oz.

Treatment of the Cattle Plague or Rinderpest. — 1. *Vaccination.* This has been recommended, on the theory that the Cattle Plague is analogous to or identical with Small-pox. Vaccination with the lymph of Cow-pock may then be resorted to as a prophylactic. It may be practiced on the udder or vulva of a cow. It has already been resorted to very extensively, but with doubtful success.

(Whether the plague be Small-pox, or a form of enteric fever, or a disease *sui generis*, the precautions of separating infected animals from the remainder of the herd are equally necessary. The diseased carcase must be buried or destroyed at a distance. The most scrupulous cleanliness must be observed in the sheds and yards, and provisions made for ventilation and abundant supply of water, with the counteraction of all noxious smells and emanations. When the cattle have sickened with the disorder, it cannot be checked, but like other contagious diseases, must run its course. The treatment can only be palliative. Among innumerable recipes we select the following as the most likely to be useful. Their application must be guided by the circumstances of the case.)

2. *The Laxative Treatment.* — Linseed oil 6 to 12 oz., with turpentine 1 to 2 oz.; the dose to be repeated once or twice. This dose, as the others, may be given in warm gruel.

3. *The Astringent Treatment.* — Applicable in later stages, when there is often much diarrhea. Chalk and opium, or laudanum 2 oz., comp. infusion of catechu 1 pint, in a warm mash, with 2 or 3 table-spoonfuls of charcoal.

4. *The Saline Treatment.* Useful in moderating the fever, and generally in mild cases. Table salt ½ ℔, Epsom salts ½ ℔, brimstone ½ ℔, ground ginger 2 oz., nitre 2 oz., old ale 1 quart; or chlorate of potash 2 dr. to ½ oz., thrice daily.

5. *The Mixed Saline Treatment.* Adopted in imitation of Dr. Stevens' treatment of cholera. Chloride of sodium 3 oz., nitre 2 oz., carbonate of potash 3 oz., chlorate of potash 2 oz., sulphate of magnesia 4 oz., old ale 2 quarts. It would be as well to divide the dose into 3 or 4. Bicarbonate of soda 1 oz., common salt 1 oz., chlorate of potash ½ oz., Rochelle salt 1 oz.; in a gallon of water: 1 pint every second hour, or oftener.

6. *The Diaphoretic Treatment.* — Useful as the last, in mild cases. Sweating to be promoted by rubbing, wrapping in blankets, or vapor baths. Sweet spirit of nitre 1 to 2 oz., and spirit of Mindererus 1 to 2 oz., in 2 or 3 quarts of linseed-meal gruel. Will also act as a diuretic.

7. *The Stimulant Treatment.* 16 oz. of linseed oil and whisky. Large draughts of old ale recommended by some. 6 dr. of carbonate of ammonia 3 times a day. 12 to 15 gr. of camphor, with 20 gr. of carbonate of ammonia in gruel, thrice daily.

8. *The Tonic Treatment.* A dr. each of the tincture of perchloride of iron and dilute hydrochloric acid in a quart of linseed tea or gruel, thrice daily. ½ oz. of sulphate of iron, twice daily. 1½ oz. of powdered cinchona. Strong muriatic acid 2½ oz., strong nitric acid 1½ oz., sulphate or chloride of iron 1½ oz., water to make 1 quart; one ounce of this in a gallon of water for a dose.

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