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J. W. Wright A.M., M.D.

A TREATISE
ON
MEDICAL PSYCHOLOGY;
OR,
THE INFLUENCE OF THE MIND OVER
THE HEALTH OF THE BODY,
AND
SKETCH OF PRACTICE.

DESIGNED BOTH
FOR THE USE OF PRACTITIONERS OF MEDICINE AND THE PEOPLE.

BY
JOHN W. WRIGHT, A. M., M. D.

FIRST EDITION.

MOTTO:

“Γνωθι Σεαυτον”

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TO PROF. T. S. BELL, M. D.,
*Professor of Theory and Practice of Medicine in
the Medical University of Louisville.*

As an exponent of my high regard for his attainments in Scientific Medicine, and for his personal and professional friendship, to him this work is inscribed by the

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P R E F A C E .

SUBMITTING this work to the medical profession and common people, I feel safe in saying that both alike appreciate the influence of the mind over the health of the body. This being a new science, the author cannot more than approximate to completion. Scientifically considered, Psychology is the science of all sciences, for without mind there is no science. Any influence operating so powerfully on the health of the body as does the mind must at once become a proper object of study. The extreme practical tendency of the minds of men has caused them to overlook this important subject. The subject has been regarded as abstract, mysterious and impracticable; the truth is quite to the contrary. No science is more practical or more important.

This volume is submitted in the hope that thousands of our people by it may learn to observe the laws and phenomena of mind and body in both health and disease, so that both the mind and body may befit the subject for the highest duties in the busy arena of life. Want of this kind of knowledge has ruined

many sparkling gems of intellect; many robust bodies have become the blighted victims of disease. There is a false, very false notion in the minds of many in regard to the possibility of studying the mode of action of mind on body. There is no more trouble to see how the mind affects the body than to see how the body affects the mind. We know that the mind is reached through the bodily organism in etherization and intoxication, and by many other drugs. We know that the mind affects the bodily organism in blushing, turning pale from fright, &c. Medical Psychology, supported by common-sense philosophy is new, original, beautiful, and of the highest importance.

HIGH GROVE, October, 1866.

CONTENTS.

- AN ESSAY ON THE PRESENT STATUS OF MEDICINE IN THIS COUNTRY, page 9—INTRODUCTION, 31.
- CHAPTER I.—Psychology in relation to other Sciences, 39—Psychology—What? 39—Medical Psychology—What? 41—Its relation to Education, 43.
- CHAPTER II.—Psychology—Its relation to Practical Medicine, 48.
- CHAPTER III.—The Cerebral Hemispheres the seat of the Intellect, 55.
- CHAPTER IV.—The Temperaments, 67—The Sanguine Temperament, 67—The Lymphatic Temperament, 68—The Nervous Temperament, 69—The Billious Temperament, 70—General Remarks, 71.
- CHAPTER V.—Sense-perception, or the Five Senses, 75—Touch, 78—Sight, 80—Hearing, 84—Taste, 89—Smell, 90.
- CHAPTER VI.—The Mind affected by the different states of the Nervous System, 95—Sleep, 96—Dreams, 101—Somnambulism, 104—Somniloquism, 105—Mesmerism, 105—Spirit-Rapping, 110—Artificial Delirium, 114—Delirium of Disease, 115—Mania, 116—Insanity, 117.
- CHAPTER VII.—Psychological Out-croppings, 119—The Florid Cheek, 121—The Pallid Cheek, 124—Mental and Muscular Activity agree, 126.

- CHAPTER VIII.—Thought and Action, 131.
- CHAPTER IX.—Life a Magic Ring, 144—Infancy, 144—Youth, 152—Maturity, 163—Age, 166.
- CHAPTER X.—The Human Will, 169.
- CHAPTER XI.—The Circulation, 180.
- CHAPTER XII.—Respiration, 194.
- CHAPTER XIII.—The Skin, 205.
- CHAPTER XIV.—Digestion, 211.
- CHAPTER XV.—Secretion, 221.
- CHAPTER XVI.—Excretion, 228.
- CHAPTER XVII.—Sketch of Practice, 233—Intermittent Fever, 240—Typhoid Fever, 247—Remittent and Typho-malarial Fever, 251—Yellow Fever, 252—Measles, 253—Scarlet Fever, 254—Cholera Asphyxia, 255—Cholera Morbus, 262—Flux or Dysentery, 263—Small-Pox, 265—Rheumatism, 266—Gout, 267—Colic, 268—Diphtheria, 269—Thrush or Aphae, 270—Croup, 271—Catarrh or Bad Cold, 272—Hooping-Cough, 273—Asthma, 274—Dyspepsia, 276—Consumption, 279—Mumps, or Parotiditis, 280—Bronchitis, 281—Pneumonia, 282—Pleurisy, 284—Spotted Fever, 285—Hysteria, 287—Worms, 292—Headache, 292—Toothache, 293—Neuralgia, 293—Best Modes of Preserving Health, 294—Conclusion, 299.

AN ESSAY

ON THE

PRESENT STATUS OF MEDICINE IN THIS COUNTRY.

The profession of medicine is a deep, learned science. Not only is it a profound science, but a sublime art, considered either in respect to any of its parts, or as a symmetrical whole. He who boasts of his proficiency, his large, liberal attainments in medicine, as the result of one, two or three years' study, but boasts of his own ignorance. I regret to see the great indifference shown by so many who practice medicine. They give little or no time to the real erudition of their profession. Of course qualification can not be estimated in years. One would learn more in one year than others would ever learn. It is the amount of knowledge acquired for which we contend. It is surprising to see what a large business some men can do, in the practice of medicine, on so small a capital. I think the status of the profession is much too low in this country. It ought to be nearer what it is in England and Scotland. In this country there ought to be a

statute law in every State, defining the qualifications of a Doctor—the status which he must attain before entering upon the responsible duties of his profession. It ought to be that he commences practice because he knows something about it—not that he commences practice that he may by tampering with or destroying human life, learn something about medicine.

I think we as a people might improve by the discretion of the government, shown in the selection of Surgeons during the late civil war. A Surgeon was not received except by due examination. This examination was conducted by a board of learned Surgeons. The candidate was not received because he was the student of some good doctor, or an Alumnus of some Medical College; but received when he proved himself worthy of the position which he sought. It can not be that human life is less precious out of the army than it is in the army. Why then shall not the guardians of public health look to the importance of this subject.

I do not think such a course would at all impinge on the liberty of this country. I do not mean that any one who has a nostrum, may not have the right to sell it, if they can find a buyer. If an old woman has found an article good for a cold, let her sell it if she can find a

buyer. But do not dignify her with the title of doctor in medicine. No one who has not received the degree of doctor of medicine is a doctor according to medical ethics.

The vast amount of competition in the medical profession in this country will tend to drop out quack-nosters. They can then retire to other pursuits for which they are far better qualified. It would be better for them, perhaps, and certainly much better for the community.

The great confidence people have in specific remedies is one cause why quacks flourish. Many persons have the idea that there is a specific, certain remedy for every variety and complication of disease. They suppose one has this specific while another is destitute of it. They apply to one, and he does not seem to help them immediately. They thence conclude that he has not the specific remedy for their particular affection. They then try another and another indefinitely. They thus make themselves the victims of the most arrant quacks. They ought to apply to a physician of tried and known judgment, and confide themselves entirely to him for treatment. There are few who confide sufficiently in this class of doctors. Specific remedies are very few in number; hence the folly of such con-

fidence on the part of the people generally. Take a physician of judgment who can treat the specific disease you have, and take care of your general health at the same time.

I think a higher standing in the profession might be easily and harmoniously adopted.

I do not speak with any reference to those who are now practising. Of course I mean no *ex post facto* law, but one which looks forward in its bearing.

-The system I would suggest is to make the Medical Colleges and Universities more the objects of public care. The Legislature of each State might appoint a board of learned doctors, fix their number, define their duty, and let the State pay the members of the board a salary, &c., &c. This board should examine each Esculapian disciple after he has graduated in a chartered Medical College or University. The effect of this on Medical Colleges would be to make them more strict and thorough in their course of instruction. Some Colleges or doctor manufactories run through, in due time, all the materials that enter. Numbers bring in the money much faster than the quality. If their work had to be inspected by an impartial board before it was forced on the credulous public, they would reject at least one candidate every seven years. Numbers are

turned out every year that would not spoil from over maturity if held over until the next year.

The effect on each student of medicine would be to give him a higher aim; use greater assiduity in obtaining a higher degree of excellence. No student who is pursuing his studies in the spirit of sincerity and truth should feel these qualifications a curb to his efforts. Contrary-wise, they should be a goad to his genius. I am often surprised, that young men entering the medical profession aim so low; do so little to advance their knowledge and bless suffering humanity as it groans beneath the burden of so many diseases; which burdens medicine is destined to lighten or remove. Many seem only to desire the amassment of money and not the gold of medical wisdom.

This is indispensably necessary, that one provide a comfortable living. Men of fine literary sense often seem to have no financial capacity at all. Financial sense is needed to keep one from embarrassment; at the same time afford the means of living while he can pursue his studies. Nothing can be more certain than that expenses will keep up. Gains are always uncertain; but expenses are certain. The following is certainly an opportune sentiment:

“For age and want, save while you may,
No morning sun lasts all the day.”

While this sentiment expressed in linear measure is very true, there is no mental excellence without labor is just as true.

There is wisdom in Mr. Webster's statement that there are always plenty of vacant rooms up stairs in every profession. This need only to be repeated to be believed. The upper rooms are never crowded, while the lower ones are always crowded. Applicants keep guard continually around the house to get in the the lower rooms. It is worthy of recollection that candidates for upper rooms must enter the lower ones first. They must receive the first degree before they can be raised to the higher degrees.

I think many young men starting in professional life most signally fail because they take higher positions than they can fill with either honor or profit to themselves. They have to abandon them with disgrace. The public confidence is thus destroyed. When they see that people have lost confidence in them, they then lose confidence in themselves.

While if they would seek a position they could maintain, they might rise to a higher, after filling one lower. Stepping stones are of the greatest importance to those aspiring to

position in life. The scale of position is a graduated scale. Young men would do well to mark its gradations. They should study well the measure of their own ability to fill them. It is much more reputable to stand first in a common place, than be last in a high place.

It is my purpose to say something in regard to the learned professions of this country. They are Theology, Medicine, and Law. If a man study the subtleties of Divinity, the study is as illimitable as the universe, and as vast as eternity, consequently I dont think it comparable to either Law or Medicine. I proceed to notice the comparative learning of Law and Medicine. In what I have to say of the legal profession, I do not ignore the profession of law. I am happy to say they have attained so much nearer the maximum of what they ought to be in our own country than has the medical profession.

I regret most of all, that our profession, which should stand first in learning, estimation and guardianship of our countrymen, is now trailing. I think many fathers have a very incorrect idea as to the amount of capacity required to make a good doctor. Of the boy who early manifests an aptness to learn, the father thinks he is a boy of fine promise, not because

he is his boy merely, but because he has real mental ability. The father will say of that boy, I want to educate him for the law—I want to make a lawyer of him. That is very well: if he is determined to force the profession of law on his son, he will certainly need the benefit of an education. Of another boy much more stupid he will say, I want to make a doctor of him. Now let us look without prejudice at the facts which underlie this mode of procedure. In the first place, the father assumes a false premise. It is that law is a more learned profession than medicine. That this is a false premise I think I will satisfactorily show.

The father, with his false premise assumed, sets apart his son of most natural ability for the law. The father, from his experience reasons thus: I have known men of small ability, little scientific and no classical learning, to succeed in medicine. I know in reason they could not have succeeded half so well at law. But I do not think his success in medicine is because it is a less learned profession. It cannot be that the inferior boy succeeds because of his real intellectual ability. In the start it is admitted that he has not real ability. This fact is presented as a reason why he had best study medicine. Is it his eminent skill that gives him success? No, for it is in the mouth

of every body that he is very unlucky; but some how or other people like him, and he is doing well—yes, much better for himself than his patients. Now father, I think he succeeds because the profession honors him much more than he honors the profession. Again, he succeeds in medicine when he could not at law; because in law he would be placed on his real merit, there to stand or fall. We all think he would certainly fall. In medicine it is far different. He does not stand upon real, native, intellectual ability; but success crowns the altar of his labors, because he takes advantage of the ignorance and prejudice of the people. Most of all I think he succeeds in gaining reputation by the “*Vis Medicatrix Natura*,” or the obvious tendency in disease to cure itself. Nearly all diseases are curative in their nature, except hydrophobia and epilepsy, &c. Hence the trite old saying, “we only assist nature” by the use of medicine. The ignorance on the part of many who practice medicine, as to what is health, and what is disease, is almost incredible. These are cardinal points in medicine, health, disease, pathology. It is of the utmost importance to know the conditions of the various organs in health and disease. The way in which medicine is now practiced in this country, I leave for others to say

whether the injury done by blundering empirics is not as great as the good done by the scientific practice of intelligent physicians. I believe that a scientific doctor can give medicine and produce a given effect with as much certainty as the painter can mix paints to produce a given color. This remark, of course, is applicable only where the physician understands the true pathology, hence, I argue the necessity of a higher status in the medical profession. I now proceed to state my reasons for believing medicine (not its abuse) to be a more learned profession than the profession of law.

1st. Because medicine is related, either directly or remotely, to all scientific investigations and discoveries.

2d. Because medicine is progressive, while law is fixed from the time of its enactment.

3d. Because the physician must often be a law maker, while the lawyer never is. He only expounds law already made by persons more august than himself.

Readers, we now ask your unbiased contemplation of these propositions, supporting the position that medicine is a more learned profession than that of law. I think when you reflect on the truth of them, that you must agree with me. In this investigation, truth is the

lone idol of my reverence, to fix reason and regale the intellect.

1st. Because it is related either directly or remotely to all scientific investigations and discoveries.

Behold, how overthronged every chamber of your mind is by the phenomena derived from the simple kite experiment of Benjamin Franklin in June, 1752, who now stands a mental pyramid to the intellectual world. Every part of medicine being shaped in some degree by his investigations and discoveries, he has had a wonderful influence in giving shape and direction to much of medical research. All inquiring medical minds have attempted to grapple with the laws of that subtle fluid, electricity, discovered by him. I do not mean that the kite experiment gave Franklin the first idea he had of the existence of electricity. He then gained a more tangible idea of its behavior, of its plus and minus, or positive and negative conditions; the utility of the metallic point was then demonstrated. The knowledge of this has saved the life and property of millions. The protective power of the lightning-rod is easily demonstrated to the unlearned. A miniature house fastened together by springs furnishes a beautiful exemplification of the prophylactic influence of the steel point.

If a stream of electricity is caused to pass upon it when there is no rod erected, it is immediately thrown in pieces; but if a rod is erected, the destructive agent is harmlessly led away. The house stands symmetrical in all its parts. Not a spring is unfastened. This simple experiment once seen, is satisfactory to the feeblest intellect of the utility of the lightning-rod.

I feel, kind reader, you will pardon my digression to amplify, as this little work is not expected to be confined exclusively to the members of our profession. In 1785, Cavendish, aided by the electrical spark, first analyzed atmospheric air. By this analytical process, he resolved air into its porteine elements. See with wondering admiration what an immense influence this scientific investigation and discovery has had on medical science. All our knowledge of oxydation in the process of respiration is traceable to this analysis as its fountain source—how oxygen is given to the various tissues of the body and carbonic acid exhaled. That this is true, one can easily prove by blowing his breath in lime water. In a short time the transparency of the water is changed by the appearance of carbonate of lime (common chalk.) The milky appearance of the water proves the existence of car-

bonic acid. The converse of what we see in animals is true of plants. They appropriate carbonic acid to their cells by which they grow and exhale oxygen, as if nature would thus show us an example of economy. She gives to animals what plants manufacture and give off. She gives to plants what animals manufacture and part with. Nature in this seems to economise and keep the elementary constituents of air in equilibrio. In corresponding ratio the analysis of water has had its influence on the science of medicine. No intelligent person can say, in truth, that these discoveries have not had a mighty influence in giving shape to both the science and art of medicine. These facts noticed are only units of the thousands of others which might be cited to show that medicine is related, either directly or remotely, to all scientific investigations and discoveries. In law, there is no such a relation existing. It is unaffected and unchanged by the proud march of science, or the sublime triumph of scientific investigation and discovery. The practitioners of law have no cycles of science with which to keep pace. In medicine he must keep up with the multifarious conquests of science, or forever play behind the curtains in the corner of ignorance.

They cannot come upon the stage to play in the great theatre of intelligent professional life.

II. Because medicine is progressive, while law is fixed from the time of its enactment.

Medicine is continuously progressive. Each profound cycle of science stamps its impress on medicine, while law is fixed, or at least written. For common or unwritten law is only a logical deduction from written law. Each successive step in the endless march of medicine; each successive link in the golden chain of knowledge makes us feel—

“What’s now discovered only serves to show,
That’s nothing to what is yet to know.”

See what a shining revolution in medicine the use of the microscope has made. So mighty and so accurate are its infinitesimal and molecular wonders, that the issues of human life and death have been suspended on the knowledge gained by its use. The fate of criminals in courts of justice have been made to culminate in the truth of microscopic revelation. Not only so, but the safety and rescue of thousands from the immediate ravages of disease is due to the use of the microscope. All these facts show the progressive tendency of medicine. Reasoning *a posteriori*, or from effect back to cause, we are enabled to account

for myriads of phenomena which would otherwise be as dark to the mind as Egyptian night. The microscope has bathed diagnosis, prognosis, and intelligent pathology, in floods of resplendent light. What a correct idea of the pathology of pectoral diseases is obtained when the sputum is placed under the range of the microscope. It reveals with such unerring certainty, that Dr. Bennett easily detected a feigned hemorrhage in a case of bronchitis. The patient, when told by Dr. Bennett that the blood corpuscles were those of a bird, the blood of which she had mixed with her own expectoration, she became alarmed and said she had done it for the purpose of deceiving him. This case is instanced to show the truth of microscopic examination. It was Dr. Bennett's knowledge of the shape of the blood corpuscle which enabled him to detect the deception. This knowledge he had, in the first place, gained by the use of the microscope. A truly great instrument it must be to give the shape, appearance and dimensions of a body so small as a blood corpuscle, when its diameter is only one four-thousandths of an inch. To determine its bi-concavity, its comparative size, its bright rim and its opalescent centre; all this is done by the microscope, an instrument, the name of which indicates its use. Its name

is from *μικρος*, small, and *σποξεω*, to view. About the real idea is a magnifying glass to view small objects at a short distance. The stethoscope gives us a more accurate knowledge of the normal sounds of the thoracic organs. This is what its name implies; but I think its name is rather a misnomer. Its derivation means this: *σθεθος*, the breast, and *σκοπεω*, to examine; but its use means a sound conductor, not only from the breast, but from the abdomen or elsewhere. This instrument increases the force of sounds. Sounds otherwise inaudible, are by the stethoscope rendered audible. If we know the normal sounds of organs in health, we can readily detect the abnormal sounds in disease. The thermometer also lends its progressive aid to the science of medicine. The thermometer is an instrument for measuring heat from *θερμος*, warm and *μετρον* measure. Heat is divided into latent and free. It is the free heat which we measure with the thermometer. It gives no knowledge of the latent heat which the bodies contain.

The Hygrometer, like the other instruments noticed, lends its impetus to increase the velocity of medical progression. Hygrometer an instrument for measuring the degrees of

moisture of the atmosphere. If farmers had one, it would assist them very much when they have such an intense desire to know the prospects of rain in a drouth. We have then the microscope, stethoscope, thermometer, hygrometer, all acting as so many inlets, which pour their contents into the ever-swelling and ever-flowing stream of medical progression. Progression is stamped upon them all in golden capitals, standing out in bold relief to every inquiring mind. These are only a few means by which medicine progresses. Besides these are the thousands of chemical apparatuses, chemical agents, and re-agents, chemical actions, and reactions, with the almost innumerable chemical tests. All these bespeak the proud achievements of science. They teach us that by their aid the progress of medicine is ever onward—the goal of *original research* still soliciting with its lustre of beauty and unrivaled grandeur. These few hints are sufficient to establish the proposition that medicine is progressive—that no such progression exists in law, consequently the greater degree of learning is necessary to master medicine. Law is a fixture from its enactment. Medicine is ever subject to change from every new ray of light emitted from the ever-glowing sun of science.

III. Because the physician must often be a

law maker, while the lawyer expounds the law already made by persons more august than himself. If it is argued that medicine is written as well as law, true, much in medicine is written. Alas, it is too true that much is falsely written. It requires the soundest learning, and the best judgment, to know what is false and what is true. Judgment and reason must be combined with close observation to make a good practitioner of medicine. It may not be improper here to discriminate between judgment and reason. Judgment is synthetic, and reason analytic. Judgment places together the component parts, and draws therefrom an opinion. Reason separates the component parts for examination or analysis. After the separation for examination, and each part consecutively examined, then the opinion is made up of the whole from the examination of all its parts. When the parts are united and an opinion is made up of the whole, this is the office of judgment. In medicine, laws are varied to suit the case. He is a miserable, blundering, blind empiric, who treats every case alike. All must, in the very nature of things, turn upon the pinion of his judgment and common sense. By common sense, I mean a knowledge of men and things. A physician who uses remedies without understanding the

true pathology, and without knowing the true philosophy of their action, is about as often a speedy messenger of death, as a minister of health. He must, of necessity, practice in this way if he confines himself to books strictly, and has not judgment or ability to vary the laws of medicine to suit a given case. No such order is necessary in law—the strict letter and meaning of the law is the guide. The proper construction of the language of the law is what is mainly necessary. This properly done, its judicious application to a given case only remains. A law in medicine is the same as a law elsewhere; it is only a rule of action. No man in the practice of medicine can have a fixed rule of action. He must hear the evidence in the case and make his rule of action from this data.

Symptoms vary, constitutions are unlike; therefore, a man's judgment must vary each treatment. All judicious, skillful practice of medicine must be founded on this principle. Every thing must turn upon the pinion of his judgment. No practitioner can administer opium to infants with the same impunity that adults bear it. For, indeed, no one can be too cautious about giving to infants any preparation of opium even in the smallest quantity, while on the contrary they bear mercury much bet-

ter when the dose is proportioned to the age of the recipient. A safe, cautious practitioner, would not use aloic purgation in the case of a parturient female. The danger would be, too great peristaltic action of the bowels. This might cause uterine contraction, and uterine contraction produce abortion. It may be said that this conclusion is derived by sorites, or chain argument, nevertheless it is certainly true. Under other auspices than the above named, aloic purgations might be safe and proper. It is needless, I think, longer to pursue this point. I have heard the remark from eminent jurists that medicine was a more learned profession than law. Among them I mention the name of Judge C. W. Logan, of Louisville, who has now fallen asleep; but that he possessed a fine legal mind, no one will have the hardihood to deny. Truth and fidelity to his client is the lawyer's business. To construct a new law is not the business of a practitioner at the bar. That is the business of a statesman. In short, a correct statement of the difference between a lawyer and a doctor, in regard to the point we are considering is this: the lawyer expounds fixed or written law that bears on a given case. The physician constructs a law to suit a given case. The lawyer has the law and case both given. The phy-

sician has a case given, and he has to make a law for the government of it. Again the conclusion recurs from each and all the three combined propositions, that medicine (not the abuse of medicine) is a more learned profession than law. I do not think my remarks derogatory to the legal profession. I congratulate them, that their profession, as a body in this country, is so much nearer what it ought to be than is our own time-honored profession.

INTRODUCTION.

Every practitioner of medicine is aware of the mighty influence which mental emotions exert over the different states of bodily health. Why, then, shall we not study the mysterious "modus operandi" and learn the true philosophy of their action? It is very easy for men to descant loudly about what a work on psychology in its relation to medicine ought to be. In this way they can remove difficulties *viva voce*, as if the difficulties possessed only the levity of a feather; but when they would begin to compose and make it what it ought to be, they move difficulties as if they possessed more gravity than lead, or rather more often they would not remove them at all. It is the weak-minded, the superficial and the ignorant who are readiest to try to bring plain science into ridicule, leaving out of view the fact that "true learning is always simple." It is only the superficial and the galvanized kind of learning that is so very ostensive.

Real science, as it approximates to truth and completion, is always more simple. Adam

Smith very justly remarked that machinery was always more complex when first invented. True science only can render it more simple. The greatest of labor is requisite to say great things in few plain words. Often when this great labor is bestowed, the great truth told, it seems only a very plain proposition. This simplicity the master minds most appreciate, while the weak-minded feel that there is but little spoken of importance because it is not covered in the profusion of language. He who makes the attempt only can know the difficulties rising in lengthened lines at every step before him who investigates the mysterious and mazy labyrinths found in the kingdom of mind. For four dark and bloody years the fortunes of war has held every thing at such an uncertain tenure that I have been depressed, dispirited and hindered from an undertaking at once so towering and sublime. To tell the precise action of mind on matter I cannot, you cannot. Perhaps we are destitute of a faculty that would enable us to do so. One thing we do know, that there is a nexus, or connecting link between mind and matter which we cannot explain. No theme can be more profoundly mysterious than the hygienic relation of mind over the health of the body. The radiant gleam of hope which we now have, shows that

the retarding influence of war may soon be removed, and our political sky be calm, serene, and beautiful. No desire of novelty moves me as I write, it is only a sincere and unabating desire to seek and to communicate the gold of knowledge. If I shall only plant the germinating seeds of *original research* in a field so fertile with the sparkling gems of thought, that will realize my most consummate wish. The highest object of my life culminates in obtaining and disseminating knowledge.

It must be that in future years more attention will be given to this subject so pregnant with importance to every human being. It may be that I shall only hint at principles which minds more profoundly mature, will to the world unfold. The scintillating spark of this volume may ignite matter, the blaze of which shall shine to the world with as much effulgence and beauty as the light-house offers at night-fall to the anxious mariner on the uncertain ocean. Here, in the course of my general remarks, I do not think it improper to notice the term MIND and SOUL. I think the obvious difference between the two terms is, that soul is more comprehensive than mind. There are certain things predicable of the soul which cannot be affirmed of the mind. When the term soul is used, it carries with it the idea of a moral na-

ture, something which makes us intuitively feel approbation in view of a right course of conduct and disapprobation in view of a wrong course of conduct. This moral nature, or moral faculty, we attribute to conscience, a power given us by our creator. Now to illustrate the difference between mind and soul: beasts have minds which manifest themselves in various ways. We know they have memory and will, with as much certainty as we know the sun is bright or the earth is round. Hence we often observe that a brute once badly frightened, ever afterwards remembers it. I was riding one day in my uncovered buggy, and hoisted my umbrella, which frightened my horse very badly, and he seems never to have forgotten it. If we are harmed by a brute, we may intimidate it with blows to prevent the repetition of that harm. It would be most foolish in us to administer blows, if we did not think that the brute would remember the correction. We must rationally conclude, also, that the muscles of their bodies move in obedience to their wills. When a blow is applied to any part of their bodies, the sensation of pain is given by the nervous centres, for pain is the cry of agony, coming from the affected part. In regard to the actions of human beings, we cherish quite a different class of feelings.

All human courts of justice are founded on this principle: that all its subjects possess knowledge of a higher grade than the brute. However much the actions of a brute, and those of a man may agree in many respects, there are others in which they very widely differ. We should feel quite differently towards a parent who would destroy its child, and a brute that should destroy its young. We should have a moral loathing and disgust toward the parent, which we never feel towards a brute. The foundation for human responsibility is laid in the moral constitution of the mind. It is this which makes man a responsible, moral agent—a fit subject of moral government. We thence predicate of man, that he possesses a soul, because he has this moral nature. We have no evidence of its existence in brutes, therefore, we predicate of brutes, mind only. Men have minds, brutes have minds also. Men have souls, but brutes have no souls. This is the true deduction. The difference between mind and soul is, that soul is more comprehensive than mind in its application. Mind comprehends intelligence, will, memory, &c., but soul comprehends all that mind does, and a moral nature besides. Unless this is the proper discrimination between the terms mind and soul, brutes possess a soul. We have no evidence that brutes possess a

moral nature, therefore they have no soul. We have evidence that they have minds, therefore we say they have minds, but no soul. Man gives evidence of what we call mind in brutes, and he gives evidence of a much higher grade of powers, which we call a moral nature. We therefore affirm of man, that he has all that is meant by mind or soul, while brutes cannot have more than mind, at least we have no evidence that they possess a moral nature. The question has been asked, "What more hath man than instinct, what less hath the brute than reason?" Every judicial proceeding must be governed by the evidence given. We have just as good evidence that man has a moral nature in addition to instinct, as we have that the vegetable world is clothed in green. We have no evidence that brutes reason from known facts to derive unknown conclusions. The *a priori* process is never shown in their actions. This is the part of human reason, to trace a cause to its legitimate effect, or conversely, to reason *a posteriori*, or from effect back to its cause. In the absence of all such evidence on the part of beasts, we conclude that human reason is much above the highest exhibition of reason manifested by brutes. In answer to the question, what more hath man than instinct? In the first place, he

has reason which is of a much higher grade than instinct. Secondly, he has a moral nature which elevates him far above the instinct of brutes.

The beast has a great deal less than human reason, because human reason takes known facts to arrive at unknown conclusions. The most exalted stretch of brute reason gives no evidence of this high grade of reason which we choose to denominate human reason. I have been diffuse in my general remarks about mind in a general sense, that we might the better understand the restricted sense in which I shall use it in this book. I shall of course use it to mean the human mind. In this restricted sense, I shall not use the term mind in contradistinction to the term soul. Psychology more naturally suggests the word soul, but I shall use mind as its equivalent. When thus used, mind is restricted to the human mind. Thus used, it is the synonym of the word soul. No one can object to this use of the terms, if they themselves choose greater precision. For it is allowable in discussion, that a person make their own definitions and use them accordingly.

but none which is of a higher grade
 than that of the human mind. It is
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CHAPTER I.

PSYCHOLOGY, IN RELATION TO OTHER SCIENCES.

PSYCHOLOGY, what? A discourse or description of the human soul—the sublime science of mind. The word psychology, is so much more definite than mental philosophy, that I select it in preference to that term—Psychology, from *psuken*, soul, and *logos*, discourse. It has for its object, the investigation of the facts and laws of mental operations. This is the great emporium of science, for there is naught of science at all without a mind to conceive it. It is within the awe-inspiring precincts of the mind, that so many streams of knowledge well up. Such a stream is the science of number, the science of quantity, and the science of astronomy, &c. Our ideas of time and space are purely productions of the human intellect. The human body, curious and wonderful as it is in its formation, wide, extending as are the laws by which it is governed, is nevertheless infinitely inferior in worth and dignity to the lordly

spirit that dwells within this fair castle, presiding over its beautiful domain. Anatomy is deeply wonderful, but psychology is superlatively more wonderful. It is this which places us upon the summit of intelligence, and gives us the mastery and lordship over this lower world. As all the numberless converging paths at the mountain's base, point to and culminate upon its summit, so all the sciences point to, and culminate in the science of mind. Psychology is the golden nucleus around which all the other sciences arrange themselves, as so many sparkling points in the galaxy most superb. Men carry their investigations and inquiries to the home of the stars. Why not study and classify the operations of their own minds, as well as arrange the stars in classes and constellations? When the astronomer places his eye to the telescope to behold the wonders of far off worlds which inhabit their starry homes, why not turn his meditations within, and say, what is my mind? for it is this alone which enables me to be cognizant of any of the revelations of science. Shall it be neglected because it is mysterious? Is not its importance as great as its mysteriousness? Lover of learning, do not neglect this important theme because it has no cabinet of splendor filled with royal paintings and relics of distant

countries. The mind is like the strata which underlies the mountain, giving it shape and contour, as it pierces the bending opalescent cloud. The silvery mountain of science rests upon the strata of mind.

Medical Psychology, what? It investigates the science of mind as related to the science of life. That the operations of the human mind effects very much the conditions of health, no person of intelligence can deny. The physician soon observes the mind to be the secret spring of human action. With this observation, he makes the mind an important part of his study, although he may not understand how the mind effects the living tissues of the body. He must be aware that it exercises a great influence over them.

A well-timed *word* often does more good than a medicine. It is the great placebo which often quiets muscular, nervous, and arterial excitement. In order to understand the true pathology of a disease, it is necessary to know the effect caused by the exertion of each of the mental faculties. One great truth, we must bear in mind in considering this subject, is that the mind is a unit—one and indivisible—not capable of separation into parts like the body under the dissector's blade, although the mind is one immaterial, indestructible spiritual

substance. Yet for the sake of description we give its faculties appropriate names. This nomenclature becomes necessary from its functions. By a faculty of mind is meant its power of action, or of performing some operation. These faculties or powers of mind have as many different names as the mind is capable of performing different operations, such as thinking, feeling, acting, remembering, imagining, judging, perceiving, reasoning, loving, fearing, hating, desiring, choosing, rejecting, &c., &c. When we speak of the mind performing these actions, they are not to be considered as parts of a whole, for the mind is not separable into parts. It is one spiritual substance manifesting itself in all these various ways. It is conceded that the pleasures of fancy are more conducive to health than those of the understanding. Those of the understanding are wrought out by the dint of thinking—they require mental exertion. Each mental effort must reasonably induce some degree of bodily depression. If this is not true, why is it that the student feels so prostrated after a day of hard study? Why is rest and relaxation so sweet to him? Why does his bodily powers demand recuperation? It is because his mind has been at work, and this mental effort tends to oppress and depress the vital powers. The

expenditure of nervous force causes 'exhaustion. Medical psychology seeks to know the true philosophy of the phenomena—to trace the mental cause to its legitimate physical effect. We often hear of the different states of health being materially affected by the violence of mental emotions. This, no doubt, is often the real cause—mysterious and ill-understood as it is, it must doubtless often be true.

ITS RELATION TO EDUCATION. This science must be of the greatest importance to the teacher who understands it, and judiciously applies it in his instructions to the youth. In this way, he may learn them the wisdom of the motto *Γνωθι Σεαυτον*. For to know thyself is the *par excellence* of all wisdom. This is what medical psychology assumes to make known. We never can learn to make close discriminations until we know something definite about the science of mind—we see the manifestations of mind through matter. The immaterial mind displays itself through the material organism of the body. Then, as all our ideas of mind are obtained while that mind is united to a living body, how important must this science be to a teacher who has to train the young mind in such a way as to strengthen its powers, and increase the bodily vigor to maintain its mental strength. We see a want of this knowledge

often, when we enter the school-room, and see the pale, enemic child, who is dwindling away for want of proper attention to the vigor of mind and body. These must be kept as near in equilibrio as possible. When the mind of a child is much stronger, in proportion, than the body, the body is apt to languish; defective nutrition and secretion are apt to supervene, thus the dire seeds of disease are well planted in its constitution. Give that child plenty of free air, a good nutritious diet at proper intervals. If the season is winter, warm clothing. Encourage the pleasures of taste and fancy. The child cannot always live in the regions of intellect. Too much labor of mind weakens the body, and bodily weakness weakens the mind ultimately. Both then, enter the vortex of ruin together. The dearest, brightest hopes of the fond parents are forever lost. On the contrary, if the child is plethoric, and fond of the pleasures of sense, encourage him to study, stimulate him by every possible motive. Kindness and sincere interest in the pupil's welfare, secure the best possible control over the child. Brute force, to govern the child and make it virtuous, has deservedly gone out of fashion. This practice has perished with its using; but virtue is indispensable to the well-being of each child, as well as to the

school or civil government. I think if more time in schools was spent in inculcating the principles of virtue and morality in general, instead of indoctrinating the young mind with the dogmas of some particular church, the world would be much better. He is not a competent teacher who knows only the knowledge he wishes to impart, and does not know the nature of the mind to which he is seeking to impart that knowledge. The mind is a harp of many strings. The teacher must not only know the music he wishes to play, but must understand how to use the instrument on which he is to play. The mind is the instrument, the teacher's knowledge the music. The body is the man who keeps the instrument in order, and gives it tone. The teacher must be proficient in all these, if he is efficient in teaching. Medical psychology must, of necessity, be very intimately related to education, and to our own personal interest and happiness. We study the heavenly bodies which move on in silent majesty, regardless of man or his destiny. The cycles of mathematical science, age after age, has marked their swift but silent motion, as they move on in the calmness of their own eternity. They moved, age after age before we came on the stage of existence, and will probably move age after age, when we

have left life's stage forever. If we extend our inquiries to science, so remotely connected to us, shall we not study one so directly bearing on our own interest and happiness as the one we are now considering.

Medical psychology, unlike these inquires, assumes a practical nature. It is not inquiring after worlds afar off, beautiful and unknown. It is a question practical in importance. What am I? What is this body, so fearfully and wonderfully made? What is this mysterious soul, which animates my body, and is the presiding divinity over all my actions? What is that mysterious change which comes over me, called sleep? What is that final change which must come over me, of which sleep is the image, that change you call death? What is that principle you call conscience, which, when I do wrong, it fills my soul with misery, and my very existence overruns with remorse? What is this will that moves my body in obedience to its volitions? Does divine providence pre-determine this will, or am I free to enter the malestrom of ruin, or pursue the pathway of virtue which leads to happiness. These are questions which we should study, not as abstractions, for they have an extremely practical bearing on our personal interest and happiness. This study tends, in an unpar-

alleled degree, to sharpen and to quicken all the powers of the mind. It trains the mind to discriminate closely and correctly, to place things in their proper relation to each other, to make original research after the cause where the effect is known. Personal interest and happiness must be greatly dependent on a research of so much importance as that of medical psychology, which seeks to investigate the laws which govern both mind and body.

CHAPTER II.

PSYCHOLOGY—ITS RELATION TO PRACTICAL MEDICINE.

Psychology, and its application to practical medicine, is supported by facts just as conclusive as the facts which support any of the sciences.

All physical science rests for support on the laws, facts, and phenomena attending its existence. All we know of matter, is the phenomena it presents to our senses. When our physical organs come in contact with an external object, our first sensation is that we met with resistance, otherwise we should not have known that a door, a chair, or a table had impeded our advance. This is only the report of the tactile senses to the mind. They communicate the sensation through the nervous filaments to the brain. The brain is the whispering gallery of the soul, profoundly more wonderful than the whispering gallery of Paris, France. The machinery of mind works noiselessly, yet with none the less power. Volcanic

influence may be generated in silence, but that does not destroy its terrific power. We know what it is only from its phenomena. The same is true of mind, we know it presents us with various phenomena, and that certain laws govern its existence; but what matter is in itself, or why is it so, we cannot know. Neither can we know what mind is in itself, or why it is so. This is the sum total of what is meant by incomprehensibility. We know the fact, but how it is so, or why it is so, we do not, cannot know. Facts alone must furnish the data which must control the human reason, whether it is considering the kingdoms of matter external to itself or its own mysterious kingdom. The mind is an *imperium in imperio*. A question may be instituted, how can the mind know the mind? Can the eye see itself? No, the eye cannot see itself. But it presents us with phenomena by which we know its existence. While this may seem to be an objection to psychology as a science, it is a real advantage in its study. The mind does not have to take its flight to far off star-lit worlds for facts. Its facts are at its own command, and self-possessed. The astronomer may turn psychologist by taking his eye from the telescope, and turning it within and make "mankind the great study of man," inquiring what is this

lordly influence of mind making all the members of my body its obedient servants; controlling muscular activity at the option of my will. This principle is indestructible, therefore immortal—whence, then, is my destination—amid the destruction of the material world, and the fearful wreck of the created universe. What is this mysterious state called death, of which sleep is the image? What is this dread-inspiring separation between soul and body; when the body returns again by decomposition to the mother dust. You need not arouse from the dream visited stupor of ignorance to study psychology as an ideal delusion, (for it is the diamond corner stone of all science; the life-breath of all knowledge. Psychology is the starting point of all science. There would be no science without mind to conceive it. Science is purely a construction of the mind. Psychology is the people's instructor and the physician's treasure. Do you tell me that all intelligent actions are governed by the mind? I do, unhesitatingly says the mental philosopher. Does the mind give an impulse through the nervous system, which causes the muscles to contract, and motion is the result. Yes, says the Anatomist and Psychologist simultaneously. Psychology and medicine are full partners in the play of life, both in health and

disease. All intelligent actions are controlled by the will. Then if I talk, or whistle, or sing, or move, this action is controlled by my mind, for the will is the executive power of the mind, controlling the muscles which I call into exercise, when any of these actions are performed. Then that girlish form, of which I now think, with eyes more beautiful than anything in nature with which I can compare them. She is sitting at her piano, running the keys with almost angelic, imperceptible touch. This halcyon music—this charm of vocal conveyance is the secret workings of the soul, displaying itself through the muscular organism. I feel now the superiority of the soul more than ever before, since the organs of the body are only its devoted servants. These servants obey, at all times, unless exhausted by over exertion, or debilitated by disease. Surely, this noble principle cannot be of terrestrial origin, else it would not be so unearthly in its actions. This is true of only such acts as require the exercise of reason or intellect. When feeling or *sensation* influences the choice of the will, then the hidden hand of passion and affection is played out. We then expect to see its subjects dupes and devotees of witchcraft, demonology, ghosts, hobgoblins &c. Yet sensation or feeling, under the influence

of reason and moral sense, is an elysian world of happiness. We have seen that the mind controls the body, or such parts of it as are under the influence of the will. We have seen that when we walk, talk, or touch the strings of a guitar, or the keys of the piano, it is done primarily by an act of the mind, displaying itself through the bodily organs. Without reason, we would have no guide, for we have not the instinct of animals to guide us. We should be in all respects automatons, self-moving, without the control of the will. In all the various actions which we have described, the body is supposed to be in a normal or healthy state. We have seen that all intelligent actions are controlled by the will. If the will has such despotic power over the body in health, we have no reason for asserting that it loses it in disease. Man is not a man in health, and a mere animal in disease. He retains the power of reason, sensibility, and will, which make up the three grand departments of psychology. This same machinery which is moved by physical influence in health, is moved more or less by it in disease. Henceforth, it will be our purpose to show that nothing can be more reasonable than psychological influence, modifying or aggravating disease, according to the nature of the psycical impulse.

I believe the medical profession generally appreciate the mind's influence in disease. As yet, however, I think it is but little understood. The subject is one of maximum importance, both to the physician and patient. I am not of the number who can ever believe in conjuries, mesmerism, tarantism, or any charm spell, except as it is corroborated by mental philosophy and medicine as a science, not as a system of blind empiricism. I know an old lady to whom I think ignorance must be bliss, for it is her boast, if not her bliss. She claims to cure inflammation of the brain by placing her hand on the head of the patient. I told her if she would give me a reason for it, I would believe it. She said she could not, but she knew the fact. Who, that knows the alphabet of disease, could believe such unmeaning nonsense. If there was anything in harmony with psychology or medicine, then it might be believed. Many persons have only imaginary affliction from some perversion of mind. This condition of mind makes its impress on the disease, often after real organic disease is established—the mind may act as a sedative. This is capable of exemplification; it is demonstrated by the mesmeric spell, that one out of twenty can be made to sleep soundly by this spell; others of course, feel its influence to a greater or less

extent. Contrariwise, I believe, psycical influence may be made to act as a stimulant. This is well attested by facts. We see a person embarrassed, the cheek is reddened—is it not the mind that causes the blood to course to the surface? Surely it is. See a man frightened; see the increased activity of his heart—is not this mental emotion producing a physical effect? No intelligent reason can be given only that the hidden influence of mind is operating on the body, thus causing the disturbance. The mind produces muscular contraction which is necessary to all kinds of physical labor. This contraction is what exhausts the muscular and the nervous force. This makes rest so sweet. Mental effort exhausts the nervous energy. This is why we need sleep. In sleep, the nervous system has time to recuperate its strength, and renew its energies. This is why we feel so delightful when we have the savor of a good nights repose.

CHAPTER III.

THE CEREBRAL HEMISPHERES, THE SEAT OF THE INTELLECT.

There are many facts which we know to be facts, the truth of which we cannot by any hypothesis explain. There are other truths which we believe, that we do not know, and cannot explain. We know that it is a fact, that an idea is communicated from my mind to your mind. You may say it is by hearing; that is only stating the same facts in other words. Your mind is cognizant of the ideas you are now reading. This is a fact, the truth of which you cannot call in question, yet, how this is true we cannot divine. It is removed far beyond the domain of human research. Every spring of human action is moved by facts, whether we know how to explain such facts or not. Calm reason, radiant with the splendors of authority, indicates that we act on the facts we know. Leave out of view the fact we do not, cannot understand. We

recognize and act upon this principle in all our every day proceedings. Our opinions are made up by the judgment from what we know. The extent of our knowledge must mark their outline—pencil their shape and contour. Let us never foolishly decline to use valuable facts, which we know to be facts, because there are other correlative facts deeply overspread with mystery. A much wiser course would be to care for the known, instead of the unknown. Let the unknown care for itself, unless we, by searching, can find it out. Then it becomes a part of our own personal knowledge. The size of the brain appears to bear a general relation to the intellectual capacity of the individual. The brain of the idiot rarely ever weighs over half that of one possessing a good intellect. If we trace the encephalic development down through the mammalia, we find a gradual decrease in the size of the brain. Continue to trace this development down through the invertebrata, and we find a still smaller brain, until finally it appears only as a bulbous enlargement, the starting point of the nervous system. Animals, as they manifest greater intelligence, have a greater size of brain. The elephant and the whale are the only animals which have a larger brain than man. This is probably owing to the great

enormity of their size. Mind, *fac simile* of Almighty intelligence, must have its habitation within the cranial walls, yet I cannot endorse the doctrine of phrenology as first propagated by Gall and Spurzheim, more recently by Fowler and others in our own country. They begin their arguments with a false premise—it is that the mind is divisible into distinct parts or faculties, which is directly opposed to all correct mental philosophy on the subject. Mental philosophers teach us that the mind is one invisible, indivisible, immaterial thinking substance, and indestructible by any human effort or agency. It cannot, therefore, have any composition of parts. It is a unit, and not separable into prime factors. By a faculty of mind is meant its power to perform some operation—its capability of manifesting itself under different circumstances, and in different directions; but all the while it is the same indivisible unit, displaying itself under different circumstances. Moreover, the ganglionic portion of the brain is composed of gray matter which is continuous throughout the principal portions of the brain. Anatomists, physiologists, and chemists are all alike unable to mark any difference in this substance in different localities of the encephalic mass. The divisions made by phrenologists are arbitrary

and unsupported by either science or facts. The skull or osseous wall of the cranium is composed of two lamina, or plates of bone with an intervening structure, called diploë. There are prominences on the external plate, or lamina of the skull, when there are no corresponding depressions on the internal plate or lamina. This proves that the prominences on the external plate of the skull are not caused by the convolutions of the brain substance. Many depressions are found in the internal plate, and the depressions are filled with brain substance when there are no corresponding prominences on the surface of the external plate of the skull. This proves positively the falsity of phrenology as a science, while there are physiological facts which seem to support phrenology. Its claims to the rank of a science are unfounded, arbitrary, and impracticable. These claims cannot have the support of a scientific basis. I think the argument of Mr. Beale on the laws of health to prove the brain a compound body, and that its different parts are employed in different studies, is not only inconclusive, but is absurd. Mr. Beale attempts to prove that different parts of the brain is the seat of different faculties of the mind: that the faculty for history is located in one portion of the brain, that for music in another, that

for mathematics in another, &c., &c. He says if this were not true, the fatigue which we experience in study could not be relieved by a change from one to the other. He says if the whole brain was engaged at the same time, the whole brain would be wearied at the same time. If the sensation of rest experienced by mind, is due to an idle condition of one part of the brain, then all philosophy which assumes that the mind is a unit, is false. For the study of music, history, painting, metaphysics, and every other study, exercises only the one mind. It is only the mind displaying itself under different conditions, and running out after different objects. I am very ready to admit that a change of study rests the nervous system, but I cannot believe it is because one portion of the brain is the location of any separate or distinct faculty of mind; because a faculty of mind is its power to perform some operation. A change of manual labor gives rest to the body. There is some mysterious principle in our nature which oppresses our minds with ennui when we continue long in one employment. This may happen when we are not exhausted by physical effort, half so much as by mental depression. One old long-continued scene becomes unpleasant to the eye. This is relieved by some scene more inviting and new. Wind-

ings and curvatures in a road may relieve the fatigue of a journey by presenting scenery new or wonderful, yet softened and sweetened with beauty. Phrenology has only to do with the exterior or outer layer of gray matter composing the brain substance. They regard this as the nervous ganglia, controlling mental activity; but anatomy makes no such division. It proves the gray matter to be continuous throughout the principal parts of the encephalic mass. There are many insurmountable barriers in the way of regarding phrenology, either as a science or an art; but we regard the mind as the commander-in-chief of all the functional forces of the body. The brain is the commander's head-quarters, or the seat of the mind. The nervous system is the telegraphic lines which bring dispatches from every part of the body to headquarters. There the commander issues his proclamation, which is carried quickly to every organ of the body by this magic telegraphic operation. Each organ is then set to work according to the imperativeness of the command, or force of the impulse received. If the impulse is very exciting, a corresponding impression is made on the organ, just as a people are excited in one of our cities by a telegram of fearful importance to its inhabitants. If this dispatch bore intelligence which in-

volved them in imminent danger, they would be thrown into confused commotion. Its normal quietude would be changed into disorderly excitement. The same results improved pathology points out in the mysterious mechanism of the human body, guided by the vivid light of ever-progressive science. The most subtle of elements and the most imponderable substance of all, is a thinking substance. The golden cycles of philosophy, age after age, have uniformly taught the mind was indestructible, except by its Creator; but this mysterious problem must rise above the combined wisdom of human philosophy, and stand before the sovereign Arbiter of the universe, in order to find its true solution. The highest exertion of human reason but leads to the belief of this fact. The mind is indestructible, but how it is so, or why it is so, remains for Almighty intelligence to disclose. The philosopher tells us that whatever has no composition of parts is indestructible. The psychologist tells us the mind has no composition of parts; therefore, says the logician, if it is indestructible, of course then, it must be immortal. Hence, there can be no division of mind to claim its domicil in any particular region of the brain. To preside over the beautiful domain of painting, music, history, mathematics, &c., mind

must be one indivisible unit, displaying itself under different conditions, and choosing different pursuits, according to the endless variety we see in the tastes of different individuals. We are free to admit, that persons of intellect usually have broad, or high foreheads.

The eye is the window of the soul, through which much of the disposition can be read; yet, the latent fires of genius often burn unseen, and the gold of wisdom is embedded far beneath the palsied touch of phrenology; but concluding, we recapitulate some suggestions which mark the brain as the seat of the mind.

1st. When an injury is done the brain, it affects more directly the mind, than an injury done to other parts of the body.

2d. As a general rule, intelligence increases or diminishes in both men and animals, as the relative size of the brain increases or diminishes.

3d. Any cerebral disease affects the mind more than the disease of other parts.

4th. In close mental effort, we try to free ourselves from sense perception. This we receive by nervous influence, or through the five senses. These we try to keep inactive while engaged in the pure dint of thought, as if the commander-in-chief of the bodily forces would keep his head-quarters sacred to himself while maturing his purposes. While thus engaged in rea-

soning, or the association of ideas, he would cut off sensation, which comes through the spinal cord, or sense perception, which comes through the nervous system of telegraphing. The mind, being chief in command, is lost to sense perception while confined to its native home, the cerebral hemispheres. Regarding these, with many other points of deep interest, we conclude the brain must be the mystic seat of the invisible, indestructible, immortal mind. The nervous system and spinal cord being united to the brain, we have as perfect a system of communication to every part and particle of the body, as we have over our beloved country by means of the wonder-working telegraph. After what has been said of the cerebral hemispheres as the seat of intellect or reason sublime, we must not forget that the mind, as a symmetrical whole, has to do with the entire nervous system. The brain we regard as having most control over the intellectual operations. The spinal cord and nervous system are the instruments of sensation, volition and motion.

There are questions connected with these issues which paralyze all philosophy and strike dumb all human wisdom. Of such a nature is the question, How can mind, an immaterial substance, affect the body, a material substance?

This question we are not presumptuous enough to try to answer; but the most sensible course is to use the fact that we have learned by experience. Leaving alone to divinity the questions which he has not given us the power to answer, we shall always find ourselves lost in the fog of ignorance if we press questions to such an absolute extent. We know that light, heat, and moisture are necessary to clothe the vegetable world in green, but all the wisdom of philosophy and chemistry cannot unite these elements to form a single spear of grass which we press beneath our unwary feet. Chemistry reveals that the hand of nature has placed the elements, heat, light and moisture, in a magnificent combination, to form a spear of grass; but the human hand, however well skilled in chemistry, falls inconceivably short of making this magnificent combination. All that the chemist can do is to analyze and view, with a mingled feeling of wonder and delight, wisdom divine in a spear of grass, which is such a simple form of vegetation. However, we cannot indulge in the delightful reverie. We must return to the consideration of the spinal cord as a part of the nervous system, which sends nervous filaments to supply the neck, trunk and extremities of the body. These filaments are endowed with the power of sensibility and excitability.

Sensation is the power which enables us to grapple with externality—the inlet through which enters all our ideas of external objects in regard to their qualities and relations; such as shape, size, color, density, hardness, weight, tenacity, beauty, &c.

The sensation of pain and ordinary sensation are not identical. An individual may be under the influence of chloroform until he has lost the sensation of pain, yet retain the sensation or consciousness of what is going on around him. He may know that the operator's knife is making an incision in his flesh, yet have no sensation of pain. The sensation of consciousness remains present in the mind after the sensation of pain is no longer felt.

Motion is due to the excitability caused by nervous impulse. This impulse causes muscular contraction, and motion is the result. The osseous system or bony framework of the body is passive in regard to motion. They are merely acted upon by the muscles. The mind is supreme. We will—the nerves take the behest of the will to the muscles. They contract and motion is produced, hence we are again borne back on the tide of our reflections to the mysterious nexus, or connecting link between mind and matter. We shall now solace ourselves with the startling mysteries in the kingdom of mind, and continue

to trace its influence over the health of the body. The influence of the mind has all the omnipotence of a charm over the bodily health; it is the magic wand which imparts weal or woe to the body.

We have found from the intelligent glimpse we have given the nervous system, that it is the media through which the mind displays itself in the control of the body. We have seen that the brain and spinal cord are parts of the nervous system, and from these emanate all the nerve fibres which are distributed to every part of the body. No part of the integument can be pricked with the smallest needle but the nerves take cognizance of it. This proves that the minute ramification of nerves in the part act as so many reporters to give information to the head-quarters of the mind. Pain is but the cry of agony sent up from the affected part to the mind.

CHAPTER IV.

THE TEMPERAMENTS.

We will next consider the different temperaments; notwithstanding, I think there is a good deal of the fanciful about the best distinction of temperaments. However, we are bound to admit that there is a great variety in the development of individuals.

The temperaments which we propose to notice are four in number. 1, Sanguine, 2, Lymphatic. 3, Nervous. 4, Bilious.

1. Sanguine is where the red corpuscles of the blood predominate and give a red or blood complexion.

2. Lymphatic is where the colorless corpuscles predominate, and give a light or watery complexion.

3. Nervous, where there is a high degree of nervous development, with a very impressible disposition.

4. Bilious is where the bile predominates, giving a bronze complexion.

1. The Sanguine is from the red or blood complexion. This is the temperament in which the

blood predominates. The blood-making or sanguiferous process is vigorously executed. The red corpuscles of the blood are very abundant; all the organs of sanguification are well developed; the thorax prominent, lungs large, heart large and muscular. The circulation is active, the life current flows in full tide; it is a continuous and interminable self-supporting stream running parallel with life itself. The bony frame-work of the body is compact and symmetrical; the contractile power of the muscles excellent; locomotion easy, agile and powerful; respiration and circulation brisk and energetic. The ever-blooming rose of health uniformly keeps its florid home on the cheek. Intellectual ability combined with the above described organization, furnishes us with a rare specimen of perfection. Novelists picture many more such characters to the imagination than we ever find in real life.

2. LYMPHATIC is so called from the appearance of the fluid contained in the lymphatic or absorbent vessels—lymph, water, hence the name, because the fluid resembles water. In the Sanguine we find large blood-making circulatory organs; and in the Lymphatic we have a superior development of the digestive apparatus; the abdominal cavity capacious and projecting.

Succulent food is usually chosen; forehead narrow, with base of skull broad; molar bones high, giving fulness to the cheek. In this temperament the animal powers largely predominate over the intellectual and moral. Sparkling wine delights them infinitely more than sparkling intellect; fine dinners much more than intellectual feasts. Not content with due nourishment, they seek gluttonous delight. Exertion of intellect is always avoided as if they were sure it possessed some direful bane. They are apt to be routinists in their employment; in the majority of cases the moral sense is blunted, perverted and depraved by appetite and passion. They love the lowest ends of human life, for want of magnanimity and moral sentiment to elevate themselves above the bogs and marshes of uncontrolled passion.

3. NERVOUS.—This is characterized by a high degree of nervous development, making the subject exceedingly impressible; sensitive to very delicate influences; sparkling animation invests the countenance. When their passions are excited, they move like the mountain slide with an irresistible velocity. Such persons are all gayety and excitement; they love convivial occasions, music and the merry dance; their movements quick and lively; they have intensity of feeling in every cause they espouse. This temperament

exercises a potent influence over many of the functions of the body. Many diversities of physical derangement may be engendered by too great nervous activity. Passion, unless restrained by reason and moral sense, runs riot, becomes the horse-leech of life, crying give, give, give, with unceasing perpetuity. It requires that reason, towering and sublime as it is in its sphere of influence, must summon moral aid to restrain this temperament. This restraint alone makes life useful and happy; otherwise the temper will be irascible and impetuous; life will be a continued train of insults and trials; the victim of circumstances will be duped by folly and enslaved by impulse.

4. **BILIOUS**, is where the bile is in excess. We found the excess in the sanguine was blood in the lymphatic lymph. It has also been called the fibrous temperament, on account of its muscular fibres being so well developed. Its osseous and muscular systems are made for great endurance; can resist extremes of temperature; not so susceptible to the injurious effects of heat, cold, dryness and moisture; their height is generally about medium; usually given to meditation, often to melancholy. They love the retirement of quietude; love the honey of their own thoughts; inclined to investigate; love the proud march of science, the

sublime triumphs of the human understanding; consider fame no bauble, ambition no dream; their judgment generally mature; do not perceive so quickly, but remember tenaciously. Of this temperament were many of the ancient warriors; many of our eminent jurists and statesmen, whose lives are adorned with virtuous and noble deeds, belonged to this temperament.

GENERAL REMARKS.—As we contemplate the different temperaments, we must constantly bear in mind that primitive organization fixes the germ principles of temperament. But there are many modifying causes which tend to warp and bias these primitive principles—habits of life, education, parental training, &c.

Civilization and Christianization may greatly change the original impulses. As the field yields her golden harvest by cultivation, so the mind yields the gold of knowledge by education. The converse is equally true: “*ut agri sine cultura sic animus sine doctrina est.*” A mind uneducated and unimpressed by the exalting power of morality, is truly a hotbed to sprout the weeds of evil. Alas, however, these evil weeds grow luxuriantly by the spontaneous effort of nature; they need the cultivation of education and the restraining power of morality and religion to eradicate them from the mind.

We have an endless and complex variety of

tempers in the world, but of the teeming myriads of human beings no two are precisely alike in all respects. The world is a variety store on a grand scale, with many notions in it. No two persons are precisely alike in features, movements, manners, mind and morals. We seem instinctively to love the charm of vocal conveyance, yet no two have naturally the same voice. The intonations, volume, pitch, rythm, or something else, will mark the difference in voice. The different handwritings exhibit the same variety. With respect to all these the Almighty has given variety *ad infinitum*. Temper is intimately related to temperament. Temper is a quality of mind; temperament a quality of body. Different conditions of mind are brought about by a different psycical organism; likewise the different conditions of body by a different physical organism. Different bodily organisms give rise to a different set of phenomena. Accordingly, as blood, lymph, bile or nervous development is predominant, we adopt temperament nomenclature.

We have now seen how the muscular organism is controlled by the will to produce active motion. It is by a psycical or a mental impulse received by the muscles from the mind through the nervous system. The will acts directly on the nervous system in executing the

decrees of the mind. Finding, then, that the will is the executive power of the mind, we will consider that power more at length hereafter. It must be remembered that the will is not a part of the mind, but the mind itself willing, or executing its own choice.

The grand departments of Psychology are, first, Sensibility; second, Intellect; third, Will. As the will is only the executive power of the mind governing the muscles of the body, we shall know its office and relation better when we consider the intellect which enables us to reason, think, or know; also the sensibilities which enable us to feel. Here is the great difference between man and the brute: man acts from reason, the brute from feeling or instinct. Man has lordship over the brute, because he thinks and knows the power of thought is his high prerogative. The Creator has given the brute instinct as a substitute for reason; man sinks to the sphere of a brute when he suffers himself to be governed by the impulses of passion and sensation, instead of reason and intellect. In one sense, man lost to reason and virtue is lower than the brute, for the brute has instinct as a substitute for reason. Man, lost to reason, has no substitute for it, but is a monument of folly, with the power of locomotion. The sun in all his glittering

course never shines on a more melancholy spectacle.

It is the business of the anatomist to explain the structure and use of the organs of the human body; but the psychologist to show the office of mind, to notice the soul seated in the secret citadel of power, receiving telegraphic dispatches from every part of her empire—the slender nerve-fibres faithfully carrying the dispatch to the golden throne of the mind. The corporeal senses are the receiving agents of the mind; they receive impressions and sensations. Consciousness is the witness that the reception is made, or in other words, is the knowledge of what goes on in our mind. Consciousness is not a faculty of mind. A faculty of mind is its power to perform some operation. Consciousness is the knowledge that some operation is performed. Attention, or the power of controlling mental activity, is of the greatest importance in psycical economy. This marks to a high degree the difference between one mind and another, in the realm of intellectual greatness. To gain this concentration of mind, there must be great strength of will to control the faculties of intellect. This, like every other power, is strengthened by exercise and education.

CHAPTER V.

SENSE-PERCEPTION, OR THE FIVE SENSES.

SENSE-PERCEPTION is the power of cognizing external objects through the senses. This underlies all our cognitive powers, and is the secret spring of all our mental activity. We are constantly receiving impressions from without through the senses. In this way the mind is first awakened to activity. Hence, but for this source of knowledge, we should know nothing of the external world. This is what permits us to go out beyond the magic circle of devoted self—to fill up the store-house of mind with the wonderful mysteries of nature. The senses are the great observatories of the soul. Here is the grand gallery of the mind, with reason placed at the true focal point. Sense-perception gives immediate knowledge. This knowledge is intuitive—it cannot be the result of reasoning, for the knowledge is immediate; therefore, it must be by intuition. The mind

in its construction is adapted to grapple with external objects, or objects of sense. Objects are formed so that they naturally impress the mind through the senses. All correct sense-perception pre-supposes a two-fold aspect. We must have, first, a subjective reality; second, an objective reality; we must have the ego and the non-ego. In an act of perception by the senses, we first have a consciousness that something affects our sentient organism; secondly, that some quality resides in the external object which causes it thus to affect our sentient organism. This gives rise to a two-fold reality. The first is the subjective reality, or the true ego, which is the human soul. The second is an objective reality, or the non-ego, which is some object external to us which has qualities capable of affecting our senses. As I walk the street I see a beautiful bouquet of flowers happily blended. Now what is it that creates in my mind the idea of beauty? It is the objective reality—the bouquet, affecting the subjective reality—my mind. As my eye beholds the bouquet I feel conscious it is beautiful; the sensation of my mind is that the object is beautiful in itself; yet without sense-perception I should never have felt its beauty. Now to illustrate more fully: I saw the bouquet with my eye, which is an organ of sense; the rays of light

placed the image of the bouquet on the retina of the eye; the nerves communicate the impression to the brain; the brain is the seat of the mind, then the mind has the sensation that the object is beautiful indeed. This leads us to imagine whence is the real seat of sensation. Is it in the mind? Secondarily it is; primarily it is not. I find myself connected with an organism which is the seat of sensation; this organism brings all the external world under the eye of consciousness. The nervous system is the real seat of sensation. The mind is bound to be present in this organism to take cognizance of the impression made upon it. The communication between the nervous system and the mind under certain circumstances seems to be interrupted, or the nervous impulse does not produce any psychical impression. In narcotism by morphiae; in anaesthesia, by ether or chloroform, the communication is suspended. The nerves can be irritated or even divided and no sensation is felt upon the mind. The same irritation, if the subject was from under the influence of the drugs, would cause a sensation of severe pain. Hence, we conclude the primary seat of sensation is the nervous system, and the secundo-primary is the mind. These statements are facts, but of course it is true that it is neither the mind alone nor the ner-

vous system alone which is affected by sensation, but it is the mysterious operative principle of the soul which pervades every part of this complex organism and takes cognizance of its numerous changes. We will now consider the five distinct senses respectively, viz: Touch, Sight, Hearing, Smelling and Taste.

TOUCH. When we, as sentient, reflecting beings, go forth amid the splendors of the world, we find that certain objects afford resistance. The tactual sense is the sentinel which furnishes us the sensation. This is the most general of all the senses. Nervous expansion pervades the entire body. Any part of the body may give the sensation of touch on being brought into direct contact with externality. The nerves, which give rise to any of the senses, must have substances in contact with them. Therefore, in this they all resemble the sense of touch; yet anatomy shows a separate nervous apparatus for the five distinct senses. General sensation resides in the general integument. The nerve fibres, which are distributed to the integument, are received from the cerebro spinal system. The best method of ascertaining the most sensitive parts of the body, is the plan of Valentine. Take a pair of compasses and see how near the points can be placed together on the superficies of the

body, and yet be conscious of two distinct sensations. If we continue to bring them nearer together the two sensations merge into one. Sensation is greatest at the tip of the tongue; it is represented by the decimal 4.83; while the next greatest is in the tips of the fingers, which is represented by the decimal 7.23. The sensation of the tongue is of paramount importance in the selection of articles of food. The importance of sensation in the tips of the fingers is very great, for they are much used to acquaint us with the most important physical qualities of bodies, such as hardness, softness, smoothness, weightiness, solidity, liquidity, etc. The tactile sensations are just the same in different parts of the body. If a foreign body is brought in contact with the tips of the fingers, lips, cheek or any other part of the integument, the sensation is the same in quality if not in degree. I have mentioned the integument as giving rise to sensation. Mucus membranes have sensation, but they give us no idea of externality. We have seen that the sense of touch is the most general of all the senses, yet its importance runs parallel with its generality. No man with his reason and in his right mind, can go forth into this fair-created world and not thank Almighty intelligence for the general sense of touch.

SIGHT. The organ of this sense is the eye. It ranks highest in the scale of special senses. It, in common with all the rest, has a special nerve and apparatus for its action. This sense approximates nearer to immateriality than either of the other senses. The element which gives birth to sight is wonderfully amazing in its phenomena. Recent opticians have disclosed many new and astonishing properties of light. The eye, now assisted by optical instruments, has its range of vision extended to myriads of animalculæ and infusoria, which are objects too minute to be seen by the naked eye. The range of vision, in like manner, is extended to distant objects by the use of optical instruments. Sight, by this aid, embraces within its range numberless worlds which shine as so many golden points in the diadem of night, as if deigning to speak to the soul of man, and bid him look up through nature to her great architect.

Sight is only available through the medium of light. It is only the image of the external object that we see. This is placed upon the retina by the rays of light. These rays come in straight lines to the eye. Light is truly and deeply wonderful, having a progressive motion of one hundred and ninety-two thousand five hundred miles per second. Light, according

to the best scientific investigation, is, in itself, immaterial, and is transmitted through space in a free medium. The eye has a special nervous membrane, exceedingly sensitive to impressions of light. This is known by the name given it, the retina. The nervous expansion of the retina is the apparatus of the eye in receiving light. In the substance of this membrane the filaments of optic nerve are located. Here the impress of light is first felt. Upon this membrane the image is formed by the rays of light. It is very small, of course, but quite a clear and true representative of the object from whence the rays proceed. The impression thus made upon the retina is transmitted by the optic nerve to the brain, where the invisible soul takes cognizance of it. The eye contains a very large number of nervous filaments. On this account, it is exceedingly impressible; consequently easily irritated by intense light or particles of dust coming in contact with it. Hence the importance of not exposing this organ to injurious causes. We give more special notice to the retina than other parts of the eye, because from it proceeds the impression which traverses the optic nerve in its passage to the brain. There cognizance is taken of it by the mind. Our purpose is to note the mysterious connection between mind and matter,

and not to descant upon anatomy any further than is necessary to effect our purpose. The sclerotic coat gives form and figure to the eye, and furnishes a protection for its delicate interior. The choroid has nerve tissues and blood vessels for the nourishment of the different parts of the eye. It absorbs the rays of light on their exit from the retina. This absorption is effected by the membrane made up of black pigment cells. This prevents too great intensity of light, which would render vision much more indistinct. The iris, by means of contraction and dilation, regulates the quantity of light admitted through the pupil or apple of the eye.

The cornea and humors of the eye, viz: aqueous, crystalline and vitreous, are transparent. Their transparency enables them to refract the rays of light in such delicate and precise proportions as to place the image in the most favorable position upon the retina. The crystalline lens gives the distinct form, outline and contour of the external object. The lens, by its double convexity, refracts the rays so that they converge to a focal point. As the lens is of greater or less convexity, the visual distance is greater or less. This machine of nature is self-adjusting; it adjusts itself to suit the distance. Change in the inclination of the

crystalline lens, is affected by the action of its muscles. Refraction is increased or diminished by greater or less convexity of the surface of the lens. When the chrystalline lens is more convex we have miopia, or near-sightedness; when less so we have presbyopia, or long-sightedness. This varies, of course, with degree of convexity, furnishing at once an endless variety in the visual distance. We have the haloid membrane enveloping the vitreous body inside of the retina. This is a thin, structureless membrane, enclosing a spheroidal mass of a gelatinous consistency. After a hasty bird's-eye glance at the uses of the structures of the visual apparatus, we return to the point at issue, that this sense acts powerfully upon the mind. It is the most active agent of the mind in receiving impressions from without. In our dream-visited slumbers we often have vivid and powerful impressions from the imaginal exercise of this sense. The same is equally true of certain nervous diseases.

DELIRIUM TREMENS, OR mania a potu. A delirium which supervenes upon the discontinuance of ardent spirits after its habitual use. This nervous disease often fills the mind of the patient with spectral images, which produce a powerful effect on his bodily function. This psycical impression is communicated to his

muscular organism. In wonder, behold the mutual effect of mind on matter, and the converse. He beats the air, the wall, and everything, as fancied demons, coming to devour him; is frantic under this influence; requires the strength of his athletic friends to confine him in bed. The impressions derived from sight are infinitely more powerful over him than impressions coming from any other sense. The activity of this sense does not require material contacts to call it into exercise. We observe that it acts with a high degree of power when withdrawn from material objects. The eye being so sensitive and complex in its formation, we would naturally expect many more ocular diseases. The eye needs rest; long continued exercise is not safe to risk; it may cause a paralysis of the retina, or *amaurosis*. If the eye is kept long in an oblique position it may give rise to an unnatural contraction of the muscle, and then we have a cross-eye, or *strabismus*. Every human being ought to feel thankful if none of these affections ever darken this window of the soul, so as to shut out the lovely form on which the eye would seek in vain to rest.

HEARING. The ear is the organ of audition; it is called into exercise alone by the phenomena of sound. What sound is in itself, we

do not propose to tell, but the vibration of the air is the producing cause of sound. There may be some remote cause of sound that we do not know, but we do know that the vibration of the air is the immediate cause; for when the air is set in motion by any sonorous body, the phenomena of sound is caused by its vibrations. It is common for us to say, on hearing the sound of the human voice, I hear a person; or, on hearing the singing of a bird, I hear a bird. We hear the voice, not the person; we hear the singing, not the bird. The organs of voice, in either case, throws the atmosphere into vibrations, and these vibrations are borne through the air, and thus come into contact with the ear. The ear is curiously adapted to its acoustic office. The ear does not give us a direct sensation of the object, it only produces the sensation of sound. It is by experience, gained from the aid of the other senses, that we refer sound to its producing cause—as when we say I hear a person, or I hear a bird, a bell, a gun, etc. Sound affords us the means of judging as to the distance and direction of the object producing it. Immediately on hearing a sound we locate it in a certain place; also, we form an idea of the object producing it. This we can do very correctly, for we shall not often find ourselves mis-

taken. The ear can be cultivated to tell the direction of sound, and the object producing it, with a very great facility. Napoleon rarely ever mistook the direction and distance of a cannonade, because he cultivated this power to a high degree. Some tribes of the North-west Indians can distinguish the tread of cavalry from the tread of a herd of buffalo, at a greater distance than they can see them, on the prairie. It is said the unpracticed ear can distinguish two hundred and fifty thousand different sounds. There are, it is said, five hundred distinct tones, and these admit of five hundred variations of loudness, making the first stated number. Tones and sounds are nature's own language addressed to the heart. Hence the orator touches and sways the popular assembly. Often the manner has a greater weight of influence than the thing said. A pretty voice touches the feelings; the soul, in her secret dwelling-place, is moved by the charm. The pleasant intonations of the human voice affect powerfully the heart; hence the influence of music over the uncultivated mind. The power of sound to affect the mind, is too familiarly known to need further exemplification. The sense of hearing is subordinate in rank only to the sense of sight. Hearing is more nearly allied to general sensibility than sight. The

material atmosphere must come in contact with the ear to give us an idea of sound. No sound can be produced in a vessel if the air is exhausted by an air-pump. The ringing of a bell is not perceptible to the ear if the bell is confined in vacuo. The air is the conducting medium of sound. The power of sound is greater when the air is moist than when it is dry.

We now turn to consider the physical organism that receives sound before it can reach the invisible soul. The prime departments of the auditory apparatus are three: First, the external; second, the middle; third, the internal. The internal ear seems to be the most essential part of the apparatus. It is an osseo-cartilaginous cavity, in which is distributed the auditory nerve—a nerve of special sense. This is for the reception of the sonorous impression. The chain of bones which is situated in the middle ear, stretching across it forms the line of communication from the membrani timpani to the membrane of the foramen ovale. The membranes are held at proper tension by two small muscles, the tensor tympani and stapedius. They take their origin from the neighboring bony parts and are inserted respectively into the neck of the malleus and head of the stapes. The action of these muscles draws the bones

back and forth upon their articulations. The sonorous impulse is collected by the external ear and forwarded to the *membrani tympani*, thence on the bony chain to the membrane of the *foramen ovale*; thence to the internal ear which is composed of an ovoid central portion. The *vestibule*, a double spinal canal, the *cochlea* and three semi-circular canals are supposed to give direction to sound. The common vestibule is the medium of communication; a watery fluid pervades all parts of this cavity, called *perilymph*. There are enclosed membranous sacks suspended in this fluid which have the form of the bony cavities and communicate with each other in the same way. They contain a fluid, the *endolymph*. The *membrani tympanum* would be confined on both sides but for a safety-valve communicating with the exterior by the eustachian tube, and terminating in the pharynx. This outlet of the middle ear regulates the intensity of the sonorous impulse given the *membrani tympani*. If this eustachian tube gives obstruction to the passage of air, defective hearing is the consequence. Here, then, is another inlet to the soul from the external world; another door at which sensation may enter and the mind take cognizance of it. This opens a golden realm of delight to the mind. All our social conversations are car-

ried on through this sense. Here is a receiving agent of the mind ready to bear the sensation to head-quarters; an out-post to give the signal of danger if its approach is sonorous. The danger may not be within the circle of vision, but if its advance is sonorous this is a faithful sentinel to give the alarm. Here is the kind physician's means of ascertaining the cardiac sound; the respiratory action. This is the means of our knowing the sweet voice of our dearest friend; the companion of elysian youth or college play. For the present we dismiss the subject of hearing, as we expect to refer to it again in our investigation.

TASTE. Still we explore the wide and beautiful domain of sense and find yet another of the special senses to consider. The tongue, soft, palate and fauces, compose the gustatory organs. When certain objects are brought in contact with these organs in a state of solution, we have a sensation. This sensation we classify according to its nature. It affects us as being sweet, sour, bitter, sapid, styptic, &c. The sense of taste is purely an affection of the sensibility, a mere feeling. This is an affection primarily of the organ, by the substance brought in contact with it. The mind takes cognizance of the sensation; then follows the intellectual perception or judgment. We affirm that the

object of perception is sweet, bitter, or sapid, according to the sensation produced on the physical organ. When the sapid substance comes in contact with the tongue, it enters its substance by endosmotic action. The rapidity of endosmosis is so great that it makes the impression almost instantaneously. The nerves of taste are parts of the fifth pair and glosso-pharyngeal. These nerves supply the mouth and surrounding parts; hence the access is easy from the sense of *taste* to mind. This is the simplest form of sensation. This sense we use in the selection of articles of food which nourish the body, the clay tenement of the soul immortal. The soul rules in mystery, but with as much certainty as the sun rules the day, or the moon rules the night, or the earth brings forth her golden harvest to nourish the house of the spirit. Taste is a simple sense, yet of great utility as a real necessity, and as a prolific source of happiness.

SMELL. The minute particles of volatile matter emanating from an odorous object in the form of *gas* or *vapor*, gives us the sensation of smell. We are thus made acquainted with the physical qualities of objects that may be outside the circle of vision. The sensation of smell is located in the mucous membrane of the nose. It is kept sensitive by mucous follicles

which exude a secretion that lubricates its surface. This is called the schneiderian membrane. This membrane is supplied by the olfactory nerve. The mere irritation of that membrane does not constitute a true odor. We must discriminate between the true odors and mere irritation or sensibility. We may have mere irritation of the membrane without a distinct sensation that the odor is sweet or sour. Again, we may have a *true odor* that produces in the mind a consciousness that the object emits an odor of a particular kind. These opinions in regard to the qualities of odors are made up by the common consent of mankind. It is universally conceded that sugar is sweet, because of the sensation it produces. Its sensation, like all others, is first made on the nervous system, then cognizance is taken of it by the mind. In this way it becomes a part of our personal knowledge. Most of peculiar odors are hard to describe.

The difficulty in describing mental operations is exceedingly great. Minds of blunt, discriminating power, are always laboring to bring these names into ridicule. They are inveterate to break down nice distinctions. But close, correct discriminating power is one of nature's richest, rarest gifts to man. If close, correct discriminations are made, they must

have correct significant names; unless they have names we cannot mark their peculiarities. In no department of science can there be a greater demand for the power of discrimination than there is in medicine. The physician has to discriminate the great variety of diseases that afflict our race, and the endless complications which these diseases enter into with each other; he has to discriminate the type of organism, idiosyncrasies, habits of life, etc. Judgment must execute this noble office. The mind must be stored with knowledge to judge correctly, no matter from what source that knowledge is obtained. A physician's knowledge is what he must use to be useful in his profession. I love a man of learning; *knowledge is power*. I respect the gray hairs of every man, but not his ignorance. If he is a good man he will use his knowledge and learning for the good of the people. A good man must be a *philanthropist*; and good, the more communicated, the more abundant grows. Good, by communication, is not diminished; like the sun, it shines for ages undimmed and undiminished in either beauty or lustre. Reader, I know you will pardon me for the digression from the sense of smell, as I write for your good. The principle illustrated, is that it is difficult to discriminate all kinds of odors by

the sense of smell, as it is to make the proper discriminations in practice of medicine. Our crowning purpose is to show on the one hand, how sensation, through the physical senses, affect the mind, and on the other, to show how mind affects the physical organism, both in health and disease.

CHAPTER VI.

THE MIND AFFECTED BY DIFFERENT STATES OF THE NERVOUS SYSTEM.

Amid the numberless and conflicting opinions as to how mind is affected by disease, none deny that excessive mental labor is opposed to the cure of nervous diseases. Dr. Bennett, of Scotland, for whom I have the highest regard, specifies predominant ideas as making their impress on the body in disease. I reason thus: that like causes produce like effects. Then if a predominant idea is a great cause, we naturally expect a corresponding effect. If a predominant idea is a great cause, an idea not so predominant might be a small cause, and have its corresponding effect. I am proud to have a statement so positive from a man of so much science and sound philosophy in the healing art.

We have regarded the cerebral mass as the seat of intellect, composed as it is of an aggregation of various parts of the nervous system. This mass has functions curious and wonderful.

This we have stated (and we think on good evidence) to be the seat of the intellect, and the aggregate collection of the nervous system. In health, these all act in harmony. In disease, they are disordered. When one set of fibres are excited, another may be quieted or paralyzed. It is therefore necessary to mark a difference between normal and abnormal conditions. The normal states arising from the different conditions of the brain and nervous system are, first, sleep; second, dreams. Some of the abnormal states are, first, somnambulism; second, mesmerism; third, spiritualism; fourth, insanity, &c.

SLEEP is primarily an affection of the nervous system. How sweet a state when fatigue is pressing us to the earth. Give us a few hours of good sleep, and if in health the nervous system rallies, and we are again ready for the busy duties of life. Labor produces nervous exhaustion. Hence the necessity of sleep to recuperate the nervous energy. There must be a stand still in the machinery of the system. This exhaustion, if carried beyond a certain point, is positively detrimental to the powers of life. Sleep is nature's own way of winding up the clock-work of the system. Sleep does not give any idea of what kind of a state it is. The derivation of the word refers only to the

supine conditions of a person when sleeping. It does not define the state at all. Sleep does not suspend muscular activity; does not suspend mental activity. It is the nervous system that sleeps. Continued exercise exhausts the nervous energy. It then becomes inactive. The person then gradually passes into unconsciousness. The inactivity of the bodily senses is what causes the loss of consciousness. These afford us the knowledge of the true ego in regard to things exterior to ourselves. They are the receiving agents of the mind. The avenues of the mind are closed to the external world in sleep. To use a common expression, we lose ourselves. We gradually pass into this state of unconscious sleep. We feel weary or drowsy, and the mind is very sluggish to follow out any train of thought. When persons are dozing off to sleep, they imperceptibly fall into sound slumber. Perhaps they may have been asleep for several minutes, and some noise awakens them. This is the first time that they knew they were asleep. The noise awakens them; they are then conscious of having been asleep. Sometimes persons will nod for several minutes, and deny having been asleep at all. They go off to sleep without their knowledge, and awake in the same way. In sleep we have no self-consciousness. We no longer have the

ideas of time, space, &c., in our mind. Mental activity perhaps goes on, and we are conscious for the moment of it, but no longer. Often when persons are asleep, speak to them, and they reply. When they awake, they have no knowledge of it. They existed then unconscious of self. This resembles death—existing irrespective of the body. Different senses fall asleep successively. The eyelids are heavy; a stout resistance holds them open. But now they are closed, nothing comes in the circle of vision. The presentative power of imagination may paint objects before the eye of the mind, but the sense of sight is now asleep. Touch and hearing hold out to the last. Hence when falling to sleep, noise easily arouses us. Touch and hearing, last to sleep, are first to awake. If we are touched, or our name called, we are most easily awakened. When persons are in *articulo mortis*, they hear when they can no longer speak. How common to hear they were speechless such a number of hours before they died. Hearing seems inclined to cling to the dying man even to the tomb. As sleep approaches, there is a sinking down of the head; the muscles relax; the eyelids droop. If in Church, the head seeks the support of the seat just in front. This friendly support is a prop to break the demands of gravitation. In our

waking moments, the principal power of the will is to fix the mind on one particular thought to the exclusion of others, and thus control mental operations. In sleep we have no such control. There is reason to suppose that mental action goes on; but as sleep implies a loss of consciousness, we have no knowledge of it. In some we know that it does go on, but the will does not control the train of thought. Ideas flit hither and thither without the voluntary control of waking moments. I have often retired, studying on some problem in mathematics. I have retired worried, and all my nervous energy exhausted. The problem, to the last conscious moment, seemed as dark as Egyptian night, and when I awoke in the morning, it was as clear as noon-day. What is the *rationale* of this phenomena? Mental activity went on, but I was unconscious of it. The nervous system slept. The muscular activity was not suspended, because they were capable at least of passive motion. No doubt but the mental faculties are greatly modified even in sleep, by the loss of voluntary control and self-consciousness, the suspension of this voluntary power, so natural in sleep. It may be produced by artificial causes. Such is certainly the case in disease, delirium, mesmerism, stupefying drugs and intoxication. In both cases

it results from inactivity of the nervous system.

It is a law of our nature that effort is followed by exhaustion. Exercise and rest must alternate to execute the great designs of our life. Life and death are constantly going on in our bodies. New tissues are forming, old ones disintegrating and passing away by the process of nature. All muscular contraction is brought about by nervous energy, and attended by a corresponding consumption of nutrition. All nature calls for rest. Sleep is the means for taking rest. In sleep the nervous energy is suspended; then the muscles relax, and the entire organism recuperates. This recuperation is effected by the process of nutrition. If this was suspended in sleep, like the nervous energy, death would result.

Persons of great nervous activity require more sleep. There are some natures so excessively sluggish that they have no nervous activity at all. They are ready to sleep always. But persons of an impressible disposition need more repose. This is true of children, and also the fair sex, as it is of men who are very susceptible to sensitive influences. Hence we have firmly fixed the fact that nature resuscitates her exhausted nervous force by sleep. Who so stupid that they have not felt this on arising in

the morning after a sweet night's rest, the mind serene and clear; all nature lovely; in a good humor with himself and every body else?

DREAMS—What are they? They are mental operations in sleep, of which we are afterwards conscious.

Dreams are a phenomena of sleep which must have a cause. In a perfectly healthy condition of the system, when the nerves were entirely quieted by sleep, there would be no producing cause of sensation, unless the cause was from without. Sensation must be excited in some way to cause a consciousness of the impression; otherwise it would pass into eternal oblivion and be as though it had never been. Sensation must exist at the time of a dream, and there must be an exciting cause. There must be consciousness at the moment, else there would be no recollection. The representative power of memory would have nothing to reproduce, unless there was consciousness at the moment the dream was passing in the mind. A disease latent in the system might excite nervous sensibility. A predominant idea in the mind might be reinforced by a latent disease. Actual disease might cause it. A mental emotion might have power to excite sufficient sensation to arouse consciousness to take a glimmering knowledge of the psycical impression.

This is the true philosophy of dreams. It is only to such part of our thoughts in sleep that we apply the epithet *dream*. There seems to be no oneness about dreams; no general current of thought running throughout the entire aberration of mind. There is reason to believe that if we knew at the time of a dream the precise relation of mind to body and body to mind, that we should see some cause giving shape and tendency to the dream, on some principle of suggestive ideas. This, however, is impossible for us to know. We can reasonably judge this might be the case from the phenomena of mind and body as composing a unity. Dreams, like all other phenomena, would have an endless diversity of complex causes which partially arouse sensibility. Our particular state of bodily health would be a prominent modifying cause. Our current of thought in our waking moments would be another. Your bed is hard; you dream of broken bones, perhaps. Sensation is partially aroused by an uncomfortable position in bed. Your cravat is tied a little tight, and becomes a choke-rag indeed. When sleeping, you dream of hanging. You take for supper food highly seasoned and indigestible, and you dream of something taking hold of your stomach with iron grasp; or, as a military officer once dreamed, that the

prince of darkness was seated on his stomach, with the Bunker Hill monument in his lap. This of course was enough to give him a diabolical indigestion.

Disease, in its incipiency, no doubt often gives shape to our thought in dreams. Predominant ideas may often shape them. Prevalent mental occupations and confirmed habits of life may tend to give dreams their direction and tendency. We often retire when the mind is actively engaged on some all-absorbing topic. We awake in the morning with much clearer views of it than we had the previous night. The truth is, that the mind did not leave it during the night. It was wrought out by pure dint of thinking. Although we had no sensation sufficient to arouse consciousness to activity, there must be a disposition in the mind to run its accustomed channel; to pursue the old beaten path, unless something novel diverts it into an alien realm.

Sometimes, however, the mind in dreams runs from earth to heaven, from heaven to earth; sometimes revelling in the smiles of its collateral love and dearest amity; sometimes dazzled with the blaze of fortune insufferably bright; then enduring sufferings worse than fables have feigned.

The vivacity of dreams is very remarkable.

They often seem as life-like realities cognized by the senses. This fact evinces some degree of sensation. The trace of sensation may be feeble, yet it must exist. Doubtless conclusions are reached by mental action, while we are not conscious of its having been reached as such, and this gives it the appearance of prophesy. Dreams were prophetic by direct Divine interposition, but no reason remains for regarding them so now. He is a mere dreamer and not a reasoner, who thus regards dreams, which may be accounted for on principles of philosophy and common sense. Common sense, after all is said, is the best, the surest guide to the solution of any problem, metaphysical, mathematical, moral, medical, mental or otherwise.

SOMNAMBULISM is the act of walking in one's sleep. We have been considering the normal states of the nervous system; now we come to what we termed the abnormal condition.

The will which is commonly suspended in sleep, partially regains in some way its control over mind and body. This control of the will is sufficient to produce locomotion. The muscles obey its behest far enough to enable the sleep-walker to move about. This motion is in accordance with the thoughts and feelings that happen to predominate at the moment. These thoughts and feeling are spontaneous

and casual, yet obey the great mental law of association. Sleep-walking is only a dream played out. The will, in accordance with the psychical suggestions, regains its power over the organism of locomotion. The acts thus performed are not remembered afterwards, is no proof that there was not consciousness at the moment of the occurrence. This oblivious condition is probably due to the partial inactivity of the senses, which fail to give us the proper relation at the moment.

Sleep-walkers go over dangerous places by touch; they are not conscious of the danger; hence the mind does not impress the nerves with terror. The nerves are not terror-stricken, and hence the absence of trepidity. All fear of danger is absent from the mind; consequently, there is nothing to excite irregular motions—the person being cut loose from all ideas of danger. But to say the least of sleep-walkers, it is a curiously abnormal condition of mind and body. The view above presented, seems most intelligible to me.

SOMNILOQUISM, or sleep-talking, is performed by using a different set of muscles, but presents one and the same phenomena.

MESMERISM is a state of mind induced by having the attention unswervingly fixed on a certain object or idea, until that peculiar con

dition of the nervous system is affected, which prevents voluntary control of the train or succession of ideas; also the self-consciousness which we exercise in relation to objects around us. Don't be hasty to disbelieve the truth stated above. Don't say prematurely this is not true.

In ancient times the gods were applauded for performing these operations; but of late, since science and learning have been cultivated, men call it animal magnetism, electricity, &c., which is certainly the wrong view of this singular phenomena. All the most correct experiments prove that it is due to no outside influence, but that it is the mind's influence over the nervous functions. Mesmer first practiced this method of producing the charm-spell. He had them seated in a trough, and required them to look at metallic tractors or small blocks of metal, until this state of the nervous system was engendered. Dr. Hogarth, of Bath, practiced the art with great celebrity until he published a book in which he stated his blocks were of wood, while those of Mesmer were of iron. This book placed him in the balances of reason, and *he was found wanting*. When the public confidence was lost, the charm forever banished.

I do not propose to pass over this subject

merely to knock the dust out of old metaphysical cobwebs; but my sincere desire is to clear this subject of the superstitious mystery now surrounding it. I call attention only to the common sense of mankind. Familiar facts strongly support my position. I appeal to the universal experience of mankind, coupled with the true philosophy of mind and body.

MESMERISM is a nervous condition, brought about by fixing the eye on some particular object, and not suffering it to pass to others until this condition is effected. When this is brought about, one out of twenty will feel a sense of weariness and lassitude; along with this a disposition to sleep. In some, profound sleep has been induced—for sleep is a nervous rest; along with this a loss of consciousness and self-control; also sensation, which resides in the nerves, as before shown, is wanting. If the skin is pricked, no sense of pain is felt. The subject then having lost sensation, self-consciousness, and voluntary control of his mind and body, is, for the moment, subject to the control of another. His own will does not control his thoughts. Whatever is suggested in this unnatural condition of the nervous function, is the ruling, governing, motive power. The patient has no will of his own until he can so far recover his nervous sensation from this unnat-

ural condition, that his will is restored to its proper authority. Here is all the divination, all the animal magnetism, electricity, and all other isms explained by mental phenomena, without seeking extraneous influences to produce it. It needs not that we go to the chemist or philosopher to make the experiment. Look at a certain object intently for some time, and see its influence on your nerves. A common but very apt expression for the condition is, my nerves are perfectly unstrung. They *are* unstrung. No communication is carried on if this mesmeric spell is pressed far enough. Sensation from the nerves is so stultified that the will no longer controls them, until they rest from the fatigue caused by this over-taxed condition. Indulge any sense excessively, and the nerves of that sense suffer a corresponding depression. Their nervous energy is depressed in the precise ratio of their exercise. They of course are capable of greater endurance by discipline and education. The eye, or any sense, can be depressed by continued exertion.

In every thing one part of our race seems to be a positive condition; the remainder a negative or passive. The positive rules; the negative is ruled by the positive. It is the negative element that is most susceptible to mesmeric influence. When this disturbed condi-

tion of the nerves in which sensation is so blunted, occurs, the subject is ruled by whatever idea is suggested. About one-half of the people are governed by ideas suggested by others, out from under mesmeric influence. Because they do not exercise their own reason, controlled by the will, they adopt the suggestions of others without examining for themselves. This class has more of the element of feeling or sensation than of pure reason; and reason is much more talked than acted out by all classes.

The first symptom of the mesmeric spell is mistiness of vision; succeeding this, weariness and desire to sleep, partial paralysis of eyelids, deep inspirations, increased respiration. Much depends on the positive manner in which ideas are suggested when the patient has lost voluntary power. The greater the emphasis, the greater the impression and certainty of the command being executed. It seems to the patient as if some one was impelling him to act. As he has the suggested idea supreme in his mind, he has no will of his own. He does as he is imperatively commanded. The person may be unable to move his hand, for want of voluntary action. He is then subject to the command of the operator. The number sus-

ceptible to this kind of influence, is about one in twenty.

SPIRIT-RAPPING, I am satisfied, rests for its support on *monoideism*—the power of one idea over the nervous functions. The nervous excitement engendered by the power of one dominant idea in the mind, causes a loss of volition. The subject then is ready for automatic movement. He is not conscious of his moving the table any more than the somnambulist is of walking in sleep. This is often coupled with high nervous excitement. I have seen operators turn pale as death when they seated themselves at the table to call up the spirits, they said. They were communing with a spirit, but it was their own spirit. And many abuse their mind by this. They contract nervous disorders, which ultimate in insanity. I call to mind a young man of most brilliant talents, who was ready for the lunatic asylum after operating a few times. I cannot be superstitious enough to believe in this kind of demonology, so called spirit-rapping. But since witchcraft has played out, there is a Colchester to amuse the people by spiritualism. Silver bullets are not used to shoot witches now-a-days; but greenbacks are used to pay spirit-rappers. Filthy lucre calls up the departed spirits with the greatest facility.

I believe that sleep-walking, sleep-talking, spirit-rapping and mesmerism, depend on a state of the nerves under predominative ideas of the mind. Then the subjects are not conscious of how they receive impressions. They lose the power of reason and control of the train of thought. Suggestions take immediate effect upon them in this condition. Every practitioner of medicine is aware of the influence of monoidism in nervous diseases. Suppose a parent has lost a child by sudden death, this is the one idea of the mind. Suppose that parent is very sick at the time this idea is pressing him so heavily, we expect this to interfere materially with his convalescence. Or, suppose the parents are in good health, how often we see them lose their appetite. Digestion is disordered, &c. This is monoidism, powerful and dangerous in its effects upon the health of the body. I instance the case of parents, but the same effect may be seen in all the relations of life. This is the natural consequence of monoidism; it corresponds with true philosophy of mind in its effect on the bodily organism. This is no metaphysical abstraction, but a truth of mental science and common sense corroborated by the experience of mankind. It is no desire of novelty that incites me to pursue this subject, but an earnest desire to show

afflicted humanity how great an effect mind has over the health of the body. All this phantasmagoria, demonology, and mental aberration wither like a flower chilled by autumnal frost before the true science of mind and body. If man would choose reason for his guide instead of sensation and feeling, he would no longer be a dupe to fortune-telling, mesmerism, spirit-rapping, or demonology. But witch-shooting is no more, and the people love novelty and excitement.

In considering the phenomena of sleep, we found it primarily a rest to the nervous system, and to the entire organism through that medium. We found it attended with a loss of the will or motory power, a loss of self-consciousness. Dreaming, we saw, was a partial exciting of consciousness, owing to some operation on the cerebro-spinal system; somnambulism was the dream acted out. This nervous excitement was sufficient to cause locomotion as the result of muscular contraction. We found the mesmeric spell very near akin to those, sufficiently so to give them all the same generic class—a class of phenomena resulting from the nervous system as a communicant of the mind. This communication is sensation, which in perfect sleep is suspended; in the other states only partially suspended. Men be-

come subjects of mesmerism when they lose voluntary control of their bodies by nervous excitement. This excitement, as we have shown, may be caused by fixing the eye on some object and keeping it there until this condition is induced. Men seem to be mesmerized much in the same way that birds are charmed by cats and snakes. The bird fixes its attention steadfastly on the animal until it loses voluntary motion, then it is the victim of prey, and is devoured. There is no need of all this *Jim-Tom-foolery* about witchcraft, demonology, divination, &c., to account for the phenomena of mesmerism, or improved as it may be by conjurers, and called spirit rapping. It can be accounted for by the laws of Psychology and plain facts. No need of Tarantism, St. Vitus' dance, jerking of religious enthusiasts, a few years since seen even in our own country. This is monoidism, the power of one idea deranging the nerves and displaying this legitimate result. These phenomena are all blinks toward insanity. To say the least of them, they must be the minimum degree of insanity. As there are many degrees between the minimum and maximum, I think all these artificial states of insanity positively injurious to the health of the body. They tend to disorder the nervous system and bring on many complications of disease. No

doubt they have often been the incipient cause of active disease. We now pass to the consideration of Insanity in its various forms.

First, Delirium artificial; Second, Delerium of disease; Third, Mania; Fourth, Insanity.

1. ARTIFICIAL DELIRIUM.—This may be produced by intoxicating drugs or inebriating drinks. This is either partial or total, according to the degree of intoxication, by alcoholic liquors or intoxicating narcotics, such as opium, Indian hemp, &c. The primary effect of narcotics is to stimulate, then to narcotize. The Chinese produce intoxication by chewing opium, the Hindoos by the use of hemp. Substantially the same effects may follow the use of the deadly night-shade, or aconite. Those articles being introduced into the stomach, are taken into the general circulation, and thus find their way to the nerves and brain, and thus communicate their poisonous bane. The spell of intoxication is characterized by loss of sensation, either partial or total. The first effect is increased mental activity, respiration increased, imagination sparkling, vivacious; memory retentive and active, intellect exalted above normal. But the transition is only for a short time, yet it is not rapid or imperceptible; aberration of mind begins; no succession of ideas are continued; the mind is first on one thing, then on an-

other; memory is relaxed and imagination sluggish. The intoxication produces a steady and progressive march; volition ceases, and delirium predominates. The effect of opium is well represented by DeQuincey in the confession of the opium-eater. I believe the principal part, if not all of the remedies we style nervines, act by blunting the senses and prevent the mind from taking cognizance of the pain which must be had by sensation. They are inert perhaps so far as their physiological effect is concerned; they do disturb, we know, the sensation, by their effect on the motor system. This prevents the mind from being cognizant of pain, therefore we call them sedative—they thus destroy our sense of pain. Psychology plays a very important part in the alchemy of forces.

DELIRIUM OF DISEASE is very closely allied to artificial delirium in its effect, but differs in its producing cause, although its causes are much like the other varieties. Increased cerebral excitement, images fill the mind, and trains of thought, uncontrolled by the will, pass in rapid succession. Reality is stamped on everything new, and all is vividly life-like. The writer can speak from those weeks of painful experience in typhoid fever: sometimes sold a slave in a distant country, sometimes suffering

shipwreck at sea, sometimes in the midst of a battle, sometimes sentenced to execution. I will ever know how to pity my patients, suffering from delirium of any kind, because they are all nearly related. Partial consciousness does not seem to ameliorate, but often augments the trouble very much.

MANIA.—This variety has a quality of disorder. It is a disorder of the intellect proper, and also of the emotions. When the feeling of the patient is touched at all, it is intense. We have loss of the voluntary control of the thoughts. In this form we have many instances of psychological effect. Dr. Carpenter speaks of an eminent physician who cautioned the nurse to watch any attempt to jump from the window. He lost several patients of typhoid fever in this way. It must have been the suggestion which kept this idea up in their minds. He was a very poor psychologist indeed, to be so stupid as to make such a suggestion in the hearing of the patient. The power of the suggested idea tended to produce the disastrous result. Extreme caution ought to be used where the voluntary control is gone. They are ready to take any suggestion, as they are in mesmerism. Hence the positive evil of allowing them to hear unguarded remarks when this condition is present. I tell you, psychology

has much to do with the practice of medicine. We ought always to bear in mind when we treat a human subject, that he has a soul which thinks, reasons, and remembers; that the nerves and muscles are called into action by psychical stimuli. We ought to administer this stimuli when it is needed, and a sedative when called for in the progress of disease. Psychology is no uncalled for abstraction: it is practical, pre-eminently practical. A kind word may be a greater *placebo* than a medicine. A suggestive idea may act as a stimulant or sedative, according to its nature. Those suggestions may be crowned with the richest good to the suffering patient. The effect of a word may be happier than a medicine.

INSANITY.—This is confirmed delirium. We have in insanity the same foundation-stone—loss of voluntary control of the mental faculties. Its activity is increased for a short time; but golden memory, which links us to the past, soon begins to fail. This is one of the prime symptoms. Thoughts become incongruous and incoherent; association has flown; a strange automatic condition of mind and person ensues; the will no longer exercises its power over the mind, and the mind floats away on an ocean of vacancy like a vessel drifted by the wild winds of a stormy sea. Insanity, confirmed or

chronic delirium, is not amenable to medical treatment. If insanity results from disorder of the brain, medication is perhaps of little avail; aye, habits of life, idiocyneracy, &c., all tend to make out the prognosis, but generally it would be unfavorable; yet nature, of her own inherent power, may rally. The dependence must be on the *vis medicatrix natura*. The patient should be treated with great kindness, and as mildly as a child. Predominant ideas are the greatest tyrants over their thoughts and emotions. Violent emotions of any kind are injurious to the well-being of the patient.

We have passed over three mental conditions, as affected by the states of the nervous system: we have seen what those conditions were, and will have use for them in the progress of our work. From what has been stated, we think the point is clear that they are induced by nervous disorder. This fact established, we propose hereafter to show more fully its practical utility, not only in the treatment of diseases when contracted, but to prevent its contraction, and thus make it the great prophylactic.

CHAPTER VII.

PSYCHOLOGICAL OUT-CROPPINGS.

There is a class of phenomena resulting from psychological impulses, which are palpable to the feeblest intellect. These it is our immediate purpose to develop in a manner so plain, that none can escape their importance. They are just as certain, and even more certain than the geological out-croppings which show the strata.

Among these are enumerated, first, the florid cheek; second, palor of the cheek; third, mental and muscular activity agree; fourth, the effect of fright on the beat of the heart. These all show just as conclusively the importance of medical psychology as the evidence we have shows that quinine is an antiperiodic. The great cause, I imagine, of this subject having been so long neglected is, that its operations are not objects of sense perception. They belong to the sublime realm of intellect. The practical tendency of the age is another cause of this neglect. Men cannot count the dollars

and cents for the time spent in studying the operations of their minds. Besides, it is a difficult study, and no use to bother about it, they say. Reader, this is a very mistaken idea. It is hardly possible to utter a greater absurdity in fewer words, than to say that there is no use in studying psychology. Men whose minds are blunted by sensuality, and whose souls are lucrative to a single farthing's value, can perceive the use of geology. That assists in finding petroleum, coal, and all the ores, but gold in particular. They also see the use of chemistry and philosophy. The former analyzes the soils, and we learn how to use the soils so as to improve them and raise larger crops. This is gold digging on a more certain scale. Philosophy—that has to do with the power of machinery. Here, too, money is the ultimatum. True, these are studies of importance; but the study of psychology is a parent study to them all. It is mind that assists us in understanding and using them all. All the sciences are founded on the science of mind. This enables us to study properly all other sciences. There is no science at all to the idiot. Ignorance is the foster mother of disease. Then we shall be amply and richly paid for the study of the science of all science, psychology. No gold or wealth is as valuable as health. Then psycholo-

gy, as it relates to the healing art, is of maximum importance, both as regards intellectual, moral and physical worth. A field so fertile, so prolific of good to mankind, ought not to be left uncultivated.

We will now proceed to notice the out-croppings, and notice the philosophy of each, how they are brought about, and their probable effect on the health of the body.

1. THE FLORID CHEEK; or, the *philosophy* of blushing. This is purely a psycical cause with a physical effect. It is the pure principle of virtue operating. Modesty reddens the cheek. We say of a person when embarrassed and the cheek reddened, he blushes. Now the cause is an emotion of the mind, causing the blood to rush to the surface of the body. The mouths of the capillary vessels dilate, and contain more blood under this emotion. Now here is a physical effect from the operation of the mind. The blood, which is the life-current of the body, is disturbed and retained near the surface, and hence the act of blushing, or, as we often hear persons say, made my face burn. It was nothing but the state of mind which caused this common but not unmeaning appearance. The burning of the cheek is owing to a distension of the capillaries, by an undue amount of blood. The blood is the life-current. In verity might

the Jews regard the blood as the life of the flesh. This is the element in which floats all the fluids which enter into the formation of the different tissues of the body, and furnishes them with nourishment. This is a mild form of excitement in the circulation of the blood; but it is just as certain that it results from psycical impulse as if it was the most grave form of excitement. The texture of the skin would have much to do with making the redness conspicuous. If the integument was thick, or much discolored, it would not be seen at all perhaps; if seen, it would be greatly modified. Hence in children who have a more impressible nervous system, and more delicate texture of skin, it would be more conspicuous. The same is true of *young ladies*. When they blush, it seems as if a stream of ruby light had traversed the snowy Alps. These are familiar facts, which no man in his senses can doubt. They are common appearances, but they point to a great cause and a legitimate effect. The cause is in the mind; the effect in the body. Now on the broad, common-sense principle that like causes produce like effects, let us contemplate the effect we have under consideration.

The mental impulse which causes blushing, is a mild one; consequently the effect is a mild one. Substitute a powerful cause instead of a

mild one, then what effect do we expect? Reason in her majesty speaks right out and answers, we expect a powerful effect. This is what medical psychology says. Then it is in harmony with reason and science; no waking dream or sleepy fiction, but a sober, common-sense reality, which has to do with every human being on *terra firma*. They may use parts of its great teachings ignorantly, but ignorance can never be better than scientific knowledge. It is said when ignorance is bliss, 'tis folly to be wise. In regard to medical psychology, I do not consider that ignorance is bliss, nor does it tend to bliss. Ignorance of the laws of mind and body is as aforesaid, the foster mother of disease. These phenomena may be considered trifling, but it is because we do not understand the great depths of interest of which they are only the out-croppings. The spiritual nature of man has much more to do with the bodily health than has heretofore been attributed. The medical profession have appreciated its influence, while they have little understood its "modus operandi." Our course is altogether safe; we take familiar facts to show the probability of facts greater in effect. We advance cautiously in order to be able to keep truth and science on our side.

We now pass to the second point in the order of our investigation.

THE PALLID CHEEK. Modesty reddens the cheek; fear blanches it. The process which we now consider, is just the reverse of the one last noticed. Instead of the blood being driven to the surface, it is attracted from the surface. This leaves the cheek pale and blanched. Out-croppings on the human face show wonderful resources within, as well as out-croppings on the face of the earth show its vast but hidden treasures. The telescope of the astronomer seems wonderful, because it bears him up to the infinite, that seems never to have been designed for the human eye. But the mind that conceived the telescope is more wonderful, for it is the first great cause. We see persons badly frightened, and their cheeks become pallid. The common expressions for it are, they turned pale as death, white as a sheet, &c. These familiar remarks have a meaning, both in respect to mind and body. Fright may be caused by some frightful appearance or object, some unexpected occurrence or calamity. If this effect is very sudden or very great, the psycical impulse is powerful, often great enough to shock the nervous system sufficient to produce syncope, partial or complete. Fainting is induced through the nervous centers. The shock des-

troys for the time the nervous activity; hence the heart stops its action. The heart is a force pump to distribute the blood to all parts of the system; hence the pallor of the cheek in fright. The capillaries contract and the blood retreats from the surface of the body as if it was running for its most secret hiding place, chased by the fearful bane of some deadly poison. The brain being the greatest enlargement of the nervous system, is most involved in syncope or fainting. It suffers from a diminished supply of blood; hence the first thing necessary is to cause the patient to lie down, so that the blood may have a freer passage to the brain, to recover it from the shock. Give free air; remove pressure from the chest; next, restore the nervous system to its activity by appropriate treatment, such as aromatic spirits of ammonia, acetic acid strong, &c. In applying them to the nose, care must be taken that they do not inhale too much. Cold water thrown in the face, slapping in palm of the hand, often have a good effect. That the psycical impulse is often sufficient to do this, is a fact obvious in the experience of every man. Then who can have the hardihood to deny the importance of medical psychology?

Diseases of enervation often tend to produce the same result, but in cases where sudden

fright form an object of sense-perception, or sudden intelligence is the cause, psychology is of the greatest value. In the treatment of all diseases of enervation, the mind should be kept as free from anxieties and fears as possible. Rather give them the stimulant hope; cheer them with the prospect of recovery. Hence the confidence the patient has in the attending physician, has much to do with the effect of the medicine given, as the mind may be of as much importance as a medicine. Hence a cheering word may be the *medici mentum*. The laws of the mind, if properly understood, have a powerful bearing on the healing art. We have seen how the emotion of fear causes pallor of the cheek by interrupting the circulation; how fear may cause fainting. We are bound, then, as intelligent beings, to conclude that mind has much to do with the health of the body.

3. Mental and muscular activity agree. There is a remarkable coincidence between mental and muscular activity. They both depend more or less on the development of the nervous system. If this is highly developed, we expect a greater activity of mind and body, all other things being equal. We saw, when considering pallor of the cheek, how fright might suspend the action of the heart, and pro-

duce fainting. Palpitation of the heart may arise from the same cause.

But to the point of coincidence between mental and muscular activity. We make it as a general statement that they agree. If we see persons of quick muscular movements, we see them of a quick, lively turn of mind. The reverse of this is generally true. If we see persons of slow motion, they are slow to make up their mind, as a general thing, on any subject. Of course I do not mean when I say they are slow, that they are not mature. Some minds are slow, but their judgment is very mature when formed. Others are very quick, but erratic. This is not what I am aiming at: the point aimed at is the coincidence of movement between mind and body. To illustrate, suppose you are walking at twilight's pensive hour, a fit time for reflections and improvements. If you are thinking rapidly, your muscular activity will correspond; you will walk fast. If you are engaged in the pure dint of thought, or are solving some difficult problem which requires the effort of all your intellectual faculties, then your step becomes at once slow and grave. These are facts you can demonstrate to your own satisfaction. I have not the writings of others for my guide, for none have preceded me.

The heart is a muscular organ for the distribution of blood to all the different parts and tissues of the body. Respiration and circulation are intimately connected; they exercise a mutual influence over each other. Hence, any cause which impedes respiration disturbs, in some degree, the circulation of the blood. Respiration has for its object the aeration of the blood in the lungs. The action of the lungs is, to a great extent, controlled by the will; therefore persons can hold their breath for a time, but not sufficient to produce asphyxia. After they have held it for a time, the tension of the nerves is overcome, and the lungs resume their action in a kind of involuntary way. If you hold your breath, you will find that it disturbs the action of the heart. This is one reason why so many people imagine they have the heart disease. When they feel a little bad after a bad night's rest perhaps, they commence to see if they can find out the trouble. Heart disease is very dangerous, they have heard; therefore they try to examine the beat of their heart. They hold their breath and impeded respiration disturbs the circulation of the blood. The heart being the principal organ concerned in the circulation, is interfered with first. They listen in breathless silence at the beat of the heart; it is unnatural; they are al-

armed beyond measure; they complain to a physician, and if he is a little puzzled in the treatment and the patient not doing well, he agrees with the patient. He may not be a practical auscultator any way, as it is not every one who bears the title of doctor who can auscultate correctly.

The few well-known facts stated to show the influence of the mind, are quite sufficient, I think, to well establish the fact that the out-cropping of mind proves its influence over the body to be very great. I am fully of the opinion, from what my experience in practice teaches me, that a great deal of suffering is endured for want of proper knowledge in regard to the laws which govern the soul and body. The science of mind is wonderful. The years of study I have given the subject open constantly enlarging fields of study—fields rich with interest, paramount interest, to every human being, whether they appreciate that interest or not. Reader, I am sure that your own experience confirms what I have said in regard to mental and muscular activity. How beautifully and ingeniously they coincide in their action! This is no far-fetched fiction, but it is the statement of true and sober reality. Facts are stubborn things: their force is not easily avoided. No man who has his heart in its right position, will

try to avoid them when they are for the public good. No man with any spark of philanthropy will conceal what relieves human suffering and tends to promote virtue and happiness.

Many of the most distressing diseases which afflict our race are the result of ignorance, a commodity some doctors always have on hand. It is almost incredible to speak of the ignorance one meets with in passing through a country like ours. The height of enterprise is to make money, which is laudable if not carried too far, but to contract disease of the body and the higher powers of the mind for money is foolish.

CHAPTER VIII.

THOUGHT AND ACTION.

1. THOUGHT is the secret spring to all intelligent human action. This is what gives shape to human character. Here is the under-current moving before it the man. It is noiseless but powerful, silent but prevailing. Human character, like water, takes its shape from the vessel that contains it. The extreme mobility of the particles of water, cause it to take its shape from outside pressure. Human character, in its formative stages, is very mobile, unstable in its structure. Few thoughts are intuitive, compared with the total number. Most of the thoughts are suggested by some object of sense, or some suggestion by another person. Thought is the nursery of human character. A man is good or bad just as he is in the habit of thinking. It is in the dark caverns of thought that men first learn to be villains. They familiarize themselves in their thoughts with vice. Vice at first to them is startling; they tremble at the thought, as a man who has never been

in battle trembles at the thought of the first engagement. But after becoming familiar with danger, they make up their minds to stand it, and act accordingly. I can remember thoughts and suggestions which made an indelible impression on my mind. I often catch myself using words or phrases I heard when quite a boy, or adopting sentiments I then heard expressed. Parents cannot possibly be too particular about the associations of their children, while their characters are in this plastic formative stage. An evil sentiment may be riveted on their minds which shall forever fix its impress on their mature characters. Some evil bias of mind may ruin both intellect and bodily health. Seeing, then, as every right-minded man must see, our characters take their shape from thought, action is only the execution or acting out of thought. We have wills for the government of our thoughts. Thoughts come and go uncontrolled in the mind of the maniac. It is of sane persons we speak in regard to thought and action. Some persons argue that no harm can result from what one merely thinks. Here is the very fountain-source of good and evil. Just as a man thinks, if he is an intelligent man, he acts. He may admit to the contrary when arguments are presented which he cannot refute.

“Convince a man against his will,
He’s of the same opinion still.”

This is only a nominal admission of his reason, while his will drives him quite to the contrary. It is habit of thought that has given him this herculean will, that makes him so self-willed. If a man by association or otherwise, has his mind exercised on magnanimous deeds, and these principles fixed in his mind, nothing is more reasonable than for him to make up his mind to act thus. Here is the secret but powerful hand that novels play upon the human mind and morals. They first fill the mind with the mock-heroic; they meet their love alone by moonshine.

“Come, alone, love, let us wander,”

Says one of the sentimental airs. This is the spirit of novelty. Here is sentiment; here is the wide domain of instinct, instead of reason.

You remember the great departments of mind were, first, Intellect; second, Sensibility; and third, Will. This novel literature comes under the second division. This is the type of animal passion; sensibility or mere feeling is what governs the brute. Is it laudable for man to reside in the dominion of the brute? He has intellect and a moral nature above this sensibility, unless enslaved by sensibility or feeling, and has stupefied the higher impulses of his nature by giving way to the sensibilities

until he is a perfect monoideist on this subject. Sensibility controlled by moral sense, or conscience and reason, is one of the Creator's blessings to man. Here is the origin of our sins; here is the excess of vice; here is what seduces, when reason tells the propriety of doing better. It is, I don't feel like it. This is sensibility, or feeling. Now if sensibility thus governs your thoughts, it will govern your actions, as is the case when you decline to do what reason and moral sense indicate is right and proper. Sensibility is a prolific source of vice. Novel reading is the food of sensibility, and not of reason. The danger in novel reading is, that it makes one all sentiment or feeling; in this way blunts moral sense, and stultifies heaven-born reason, man's highest, richest, most God-like power. Novels may educate the passions, which already predominate over reason and moral sense. When reason and a love for intellectual pleasures predominate, then I would not fear the practice so much. Unless this is true, they make one all feeling, and you know that all mental philosophers tell us that man, as he suffers himself to be governed by feeling, approximates toward the brute, because the brute is governed by feeling alone.

From what I have said in regard to the sentimental literature of the age, do not under-

stand me to be a one-idea man, for the evil of monoideism is just what I am attempting to show.

Novels I regard as dangerous because they tend to place feelings or sensations as the guide, instead of reason, and sensation is the field of passion, and prolific of the highest and most violent passions that find a home in the human bosom. Sensation, along with the culture of reason and moral sense, is of the highest importance to human greatness and happiness, but dangerous as a guide when reason is dethroned. Life becomes imaginary virtue and false pretense; religion a mesmeric spell; history and the sciences a despised bore. Everything sacred becomes ridicule; all magnanimity becomes mock-heroic, and the growth of reason then becomes a parasite, having no living vitality except as it receives it by piercing the overgrown trunk of sensation.

The only remedy for all this perversion of mind and body is the right use of reason, restrained by moral sense. The reason why I am so tedious about thought is because it controls action. Do you doubt the truth of this? Our own countrymen have demonstrated the truth of this to you; they have made the demonstration on a grand and bloody scale. Did not every man, to a man, who was a man

at all, side as he thought? Did he not become a defendant of secessionism or federalism just as he thought was right or politic, all things being as they were? Every man who had a mind and will of his own thought and acted thus in the desperate rebellion. Can you doubt the relation of thought and action? If you do, it must be because you are self-willed and do not take reason as your only safe guide, but choose the impulse of passion. There are some negative characters, such as we described under the mesmeric spell, who have no will of their own, but are under the will and guide of another person, who rules them by the suggestive ideas. These may not have thought and acted for themselves, but all the positive and thinking class did think and act for themselves. The great changes in the practice of medicine show that physicians, as well as men in every other department, will act as they think.

We hear old people say almost every day, diseases have changed very much since I can remember—they are not at all now like they were then. The change is in the mind of the medical profession much more than it is in the nature of the disease itself, just as the change in farming is in the way men think much more than in the soil they cultivate.

ADVANCED KNOWLEDGE has wrought the

change much more than the change in disease itself. What has caused farmers to abandon the wooden plow, or wooden mould-board and iron point? It is the advance in knowledge. Science and experience prove to the farmers that the soil is the same it always was. The change is in the minds of farmers, not in the soil. Another point is that a man's experience in farming without proper knowledge does not make him successful; it is his knowledge that makes him excel. Many young men farm much better than those of gray hairs. Experience alone never made a man a farmer or a doctor. It is knowledge improved by experience that makes men eminent in any avocation—medicine pre-eminently so. The change in the practice of the healing art has resulted from *increased knowledge* in regard to the real nature of disease; whereas we formerly thought the nature of disease to be one thing, we now think it to be quite the opposite. Here is the necessity for a change, and a permanent change. Formerly in fever it was thought all the powers of life were exalted too high. Hence the anti-phlogistic treatment, depletion by calomel and blood-letting. The lancet! the lancet! the lancet! the watch-word and the cry. Bleed to syncope or fainting; purge with mercury until the teeth rattle and drop out. This is kill or

cure practice—generally kill. But a short time ago billious fever, pleurisy, inflammatory rheumatism and ulcerated sore throat, were the principal number of diseases. All the fever known was billious; now we have typhoid, intermittent, remittent, continued, typhus, hectic, billious, and an indefinite complication of those fevers. Instead of pleurisy we have pneumonia, pleuro-pneumonia; we have acute, sub-acute, chronic, bronchitis; and many other varieties of internal inflammation. What has wrought the wonderful change? Echo answers, *increased knowledge*. Patients within the bounds of my practice, bedfast with mercurial disease, answer, *increased knowledge*. If those who sleep in their graves, victims of such practice, could speak from their tombs, they would answer, *increased knowledge*—the knowledge of disease gained, first, by increased facilities for diagnosing what the disease is; second, its real nature. The numerous instruments now used are valuable aids in recognizing disease. The revelations of science do much to prove the real nature of disease.

The old opinion that in fever all the powers of life were exalted, because they were thrown into disorderly confusion, has been banished. Since we know they are depressed, we use a plan of treatment to support and build them

up. A strong pulse has misled many in regard to the nature of disease. It is the effect, not the cause of fever; it is the effect of an embarrassing cause. Nature is making a heroic effort to relieve herself; but the doctor supposes, by the lancet, he will assist her. But the loss of blood is to nature the loss of her means of effecting the cure. Hence blood-letting is opposed to the vital changes which must take place before a cure can be effected. The disease must be removed by cell growth, which is impeded by the use of the lancet. Even local blood-letting is of doubtful origin in internal inflammation. I think it does more good, perhaps, by diastaltic or reflex action, than any other way. It is so remote from the part affected, that I doubt its efficacy. The very nature of inflammation shows the extreme fallaciousness of general blood-letting. The diminished use of mercury results also from *increased knowledge*. Inflammation is what it always was—the change is in the mind. Thought governs action, is the secret of the entire proceeding. We have shown how syncope is brought on by fright. The same result can be produced by blood-letting. Then can any man in his senses say the mind does not act powerfully on the health of the body?

IMAGINATION has much to do in fixing the thought.

Imagination is the mind's power of regarding its own ideal creations as realities. This definition is one of my own; but it is allowable for a man to define his own propositions, and use them accordingly. This is a faculty of our nature, liable to great perversion. Both judgment and reason are requisite to make an imagination life-like. Imagination furnishes vivacity to conception, tone to mental activity, radiance to reason, and fills the anticipated future. However much may be said in praise of imagination, it is liable to abuse; the judgment may be defective. We may have some pre-existing prejudice, which leads imagination astray. We suffer our minds to rest on the pleasing beau-ideal of imagination, until we forget the sober face of truth and practical life. We fancy pleasures and benefits which we never realize, until everything seems but the counterpart of our own disordered fancy. Imagination, under the due guidance of reason and judgment, gives rise to some of the highest, purest, noblest, most exalted pleasures of this mortal life. Our remarks on novel reading are appropriate to the imaginary paintings of human characters in these writings. With kindest and purest regard for young ladies, I think

they indulge imagination to excess. But it is in greater part the result of parental training. Young ladies are not raised up and educated to make good wives, so much as they are trained to watch for a good catch—a gentleman on whom fortune's uncertain smile rests. The same is equally true of the young men of our country.

The marriage relation is thus made a system of legal prostitution, when its only law should be the law of love. Yet we often hear it said by persons, they do not believe there is any such thing as love. There is certainly a fondness or attachment which persons feel for each other. This attachment varies in degree, for we are more attached to some persons than we are to others. I do not know any better names for the different degrees than those they already have, as friendship, love, &c. I think nothing conduces more to health and happiness than to be fortunate in marriage. Young man, choose a woman of strong natural mind, with a well-developed person, a pure and virtuous heart, one who has mind enough to make the best of reverse in life. You owe it to yourselves and posterity.

I believe all great men owe their greatness to their mothers. I believe much disappointment and chagrin result from an undue esti-

mate of the glitter of external fortune, and overlooking those higher and more magnanimous traits of character. My opinion is, that action in this, as in all other matters, is prompted by the way persons accustom themselves to think.

We have also shown the power of suggested ideas. As to the choice one makes, depends a good deal on the suggestions of those in whom he confides. There is a great disposition in the human mind to form its ideal, and work for its attainment. The one idea is generally wealth.

We have been marking the dangers of *monoideism*. We found it the secret in the mesmeristic spell, delirium, mania and insanity. Whenever the mind fixes on a thought, and that thought greatly predominates, there is danger to be feared. Men can become monoideists in politics, religion, medicine, or anything else. It is dangerous in anything. This is the way that the world is filled with extremists; for as they think, so they will act, all other things being equal. This principle of suggestive ideas is a very powerful one in human nature. It is the method adopted by some professional men, of recommending their professional ability. It often succeeds like a charm, in the minds of the unsuspecting vulgar. I think the power of mental emotions over the bodily health is plain

in the experience of every man. Doctors ought to avoid conversation in the sick-room about the nature of disease; patients will misconceive and misconstrue their words often. In this way they may become the subject of some predominant idea. Always give the stimulus of hope. Hold out its pleasing assurances as the bow of promise, made up of so many rich and beautiful colors. Remove all fears. We have seen how fears may cause syncope and death. We have instances on record of death by predominant idea. Facts all bear in that direction so strongly, that no man of sense can reject their mighty power. We have every reason to conclude the stimulus of hope is favorable to convalescence from any disease of involution. All the most reliable cures of consumption have been effected in medical men or persons who knew the nature of the disease, and bore up against its depressing effect.

CHAPTER IX.

LIFE A MAGIC RING.

INFANCY. The tender little nursling enters the world entirely helpless. We see no manifestation of intellect, yet the germ is within, as the acorn contains the tree in embryo. Although the acorn contains the germ of the oak, yet the summer's showers and sunshine must develop that germ. Skies serene and beautiful, clouds lowering and stormy must pass over its defenceless head before the wonderful series of changes are completed. The new-born babe gives no manifestations of intellect more than the acorn shows the herculean oak. But time pursues her steady yet onward flight, as days multiply. The sparkling eye of the dear little one serves as the index of intellect. But still no moral sense is seen, until considerable advances have been made in intellect. The child has sensation or feeling from its birth; next we find it with intelligence, and last of all, we see it approximating to the spiritual, as its moral sense or conscience is developed. This is the

link which binds it back to its spiritual Maker. Hence its eventful existence and wonderful circle of changes make life a magic ring of more than diamond value.

The first part of an infant's existence is vastly more important than most parents seem to be aware. They have an exceedingly impressive nervous system, more delicate than the flower which has been reared in the shade. An infant is a warm-house flower, and much care is necessary to preserve it from injury.

AIR, as free and pure as possible, is indispensable to the infant child; its lungs are made for air and air for its lungs. The plan of placing a child near the floor in a cradle is not a good one by any means. In this position they get the most vitiated and dampest air in the room, because philosophy proves that the damp, expired air sinks on account of its gravity. Place the infant in a bed several feet from the floor and it gets the air best suited to its lungs. If you want the infant placed in the best place, place it in a bed beside its mother. The clothing should be clean, easy, comfortable and well adjusted. Beware of MEDICINES in any form, unless there seems to be some imperative demand for it; then advance cautiously, as if danger was ambushed near by, ready to surprise you at any moment by the most dreadful

consequences. An infant usually does best without medicine of any kind; soot tea and articles of home manufacture are often used to injure the child. A little castor oil may be used to advantage to remove the meconium, but I doubt its expediency as a general rule. No rule can be made to apply to every case. The nervous system of a child is so sensitive and tender that I had rather risk the *vis medicatrix natura* in an overwhelming number of cases. I believe in addition to the above, that here is the nurturing principle of so many cross and irritable tempers in children, which they carry through life with them. The mind exercises an influence over the health of the body, and conversely the stomach or bowels of the child may be irritated by medicine, and this sense of irritation may make its impression on the temper of the child. Enteralgia or colic is very common in children. This is generally treated by some article which acts on the nerves, to render them inactive, as we have before shown. When this is effected the sensation is not sent to the mind; it is like cutting the wire to the telegraph: the communication is cut off. Hence, the sense of pain is not received by the mind. You may say this is a wild theory. It might seem a wild theory to say that the acorn would produce an oak if we did not know from

experience that such was the fact. How many very irritable, cross children have you known that enjoyed good health? How many very healthy infants have you known that were irritable and cross? My observation on children proves clearly that bad health and bad temper are co-partners which do business together. I firmly believe on the testimony of my senses re-enforced by my experience, that the theory of mind and body, as I have attempted to show, will hold good from the cradle to the grave. I venture the prediction that only a few more years will place the medical profession on this plain, consistent, scientific platform; a platform at once consistent with the philosophy of mind and body. This view of the matter makes it most important that no source of irritation be given the infant, by clothing, air, food or medicine, and that the elements of intellectual and moral nature are formed very early.

FOOD. The importance of raising children by hand, or suffering a wet-nurse to raise them, is pretty well recognized by many women. However, I am bound to differ about as far as the North is from the South, from this class of ladies. The one who nourishes the child before birth, is the proper one to nourish it after its birth, unless by disease or some other acci-

dental cause, she is incapacitated for this important duty. If a wet-nurse is selected, get one of vigor of mind and body, good morals, and even temper; for over-anxieties in the mind causes a great change in the qualities of the milk often. Children have been thrown into convulsions by nursing when the secretion of milk had been thus changed. This is a fact which cannot be denied. Then we must give medical psychology a place in our regard. As a general thing the mother's milk will be sufficient for the infant for the first eight or ten months of its existence.

The mother should not subject herself to violent mental emotions of any kind; these alter the secretion and quality of the milk, and often derange the stomach of the child. Eat a good share of vegetable food, and avoid undue stimulus. Water is the best drink, by far; too much tea or coffee is not good.

When farmers sow good seed, they expect good culture to improve the crop. Not less important is culture and due nourishment to the seedling specimen of humanity.

SLEEP. We have heretofore described sleep as being a nervous rest. This fact is presented as a reason why infants require more sleep than adults, because their nervous system is so extremely delicate that it cannot bear exercise or

exhaustion. The first few months of infantile life alternate between taking food and taking rest. If it is perfectly healthy, and properly managed, it will be prompted by something resembling animal instinct, to take its food. It will nurse, and then quietly go to sleep. Let it sleep. No danger from sleep to the child, if it is not produced from artificial causes. This is the very essence of health to a child. It will wake to nurse, if well; if sick, will wake from pain. Avoid handling infants too much. Give them light, but not too bright a light. Parents have reason and moral sense to guide them. They are not governed by instinct, as an animal. See what a difference in your colt is made by the treatment and food of its mother. Much greater is the difference in rearing children, and much more important, because they are immortal, and so are you. Hence a two-fold responsibility rests on the parent. No parent should shrink from his duty. He is not worthy to be called a man, who is not willing to bear his part in carrying out the wise and good designs of the Creator. He is a coward and not worthy to live, who would try to avoid his part of the trials of life. The adaptation of nature, as well as the revealed will of the Almighty, mark the sphere and duty of man as a rational being.

Well might Plutarch, of old, say to mothers who refused to nurse their own children, that they should be careful in selecting a nurse, and not take the first one that offered, but get one who was a Greek in morals; for, said he, they readily, during infancy, receive whatever impressions we give them. This shows that the science of mind may be cultivated even in infantile days. The plastic mind may be disordered by the milk of the mother. This may engender disease, and thus indirectly affect the mind through the nervous system. There may be great moral and physical evil result from the misconduct of the nurse. Is it easier to make an impression on water than ice? Just as much easier is it to impress the infant mind than that of an adult.

The *countenance* of a child will tell wonders as to its health of mind and body. Here is an open book; read its history. If its facial muscles are relaxed fully, its eyes beaming with delight, and seeks the breast to nurse at proper times, of course all is favorable. But if its features are contracted more than usual, its eyes livid and cry unnatural, the face will assume a corresponding expression. Health of body tends greatly to fix the future temper and turn of the mind the mature man shall bear in life. I fear there are hundreds of thousands who are

rearing children who never think of the importance of these things. The care taken with infants will richly reward the parent in future prosperity in mind and body. The child with a prosperous mind and healthy body, with good morals, can never be the same trouble to the parent in after years.

We have been a little more minute in describing the infantile parts of life than we anticipated, but it is knowledge of the highest importance to parents, and of interest to everybody. Here is the future of the world; they must perpetuate our memory and improve by our experience. No man can isolate himself from society, if he would. I know an old bachelor who conceived the idea of leaving society altogether. He entered a large forest and built all his little houses on large slides, in order that he might have them carried to another spot if the owners of the land removed him. He has spent several years in trying to invent perpetual motion, but is beginning to fall out with his lonely retreat. It would seem that he has been as much isolated as a human being could, yet his example, secluded as he was, had its bearing on those who knew him. It is folly for a man to fancy that he can cover himself from the eyes of the world with the cloak of selfishness. It is human depravity that de-

prives man of all public spirit and makes every one selfish, seeking nothing but his own good. No man ought to desire this if he could; he ought to be willing to come up and bear his part in society like a man. A man cannot use learning, wealth, or any thing else, without its having its influence, which shall contribute to the peace, harmony and good of mankind.

We must proceed to notice the educational period of life and its halcyon days of spring-time; the time of preparation for mature years; the golden parts of the magic ring.

YOUTH. What has been said of infancy in regard to mind and morals applies equally to childhood and youth. In the first stage we expect the germs of character to be planted; they now begin to take root and need cultivation. They now need qualification for society and usefulness to themselves and the world. They need *education* (from *educō*, to lead from or lead out, develop, &c.) The native intellect is to be led out and given its mature shape. In order that this be perfectly done, several things are necessary:

1. Their morals should be cared for.
2. The health of body.
3. The intellect drawn out and directed in a useful channel.

The duty of education must rest on parents and guardians. All men who have a correct knowledge of men and things, have a strict desire for the morals of their children. How often we have heard fathers remark, I don't want my boy to get into bad company. This shows that they appreciate the overwhelming power of association, and if they believe the power of suggestive ideas, they will much stronger oppose bad associations. Bad association is a deadly Upas on morals. The advance is imperceptible to the subject, but often rapid. It is on the principle of suggestive ideas that so many bright gems are ruined. Boys who might make mental pyramids of themselves, by bad associations become perfect wretches—monuments of folly. How many bright youths, with heads as clear as a bell, are ruined by bad association? I could mention the names of a number in my limited acquaintance, who were healthy, studious, and with talent shining, until their morals sprung a leak, and they were soon carried off by the tide of passion, and became victims of dissipation and every species of human folly. Unfortunate youths; blasted parental hopes; crushed heart of mother dear, and father kind. What mean all human courts of justice, trial by jury, and men studying law year after year? It means that man is de-

praved and liable to immorality and crime of every grade and hue. These are all only an exponent of the Divine Law, which pronounces man sinful. Show me a man that is useful, great and happy, and you are sure to show me one of good morals. Immorality is the poison which is destroying so many youths of our country, filling the jails and prisons and untimely graves; young men who with good morals had capacity to be useful ornaments to society. Morality is the strata which underlies all true greatness and magnanimity; this gives rise to noble thought and action. Moral sense must curb the passions in bonds and make them a blessing instead of the dire destroyer of all that is good or great. This alone can direct reason and intellect into their proper channel. This is what presents the proper motive to influence the human will, which is the propelling power to action. Young men, cultivate morality, if you would be useful, good or happy.

2. The health of the body should be cared for. It is our purpose to mention first the things which seem to strengthen something else. Sound morals lead to health of body; health of body leads to health and strength of mind.

In regard to health of body, we notice four

prime points as necessary: first, Air; second, Food; third, Clothing; fourth, Exercise.

1. Air is the vital breath. It is the Almighty's element of life to the myriads of his creatures. The entire animal kingdom prey on this element. It is so abundant that we do not estimate its value properly. The air, in contact with the blood in the lungs, and capillary apparati, is what keeps it in a healthy condition. The blood is the life-current of the body, vivifying, refreshing, and carrying off waste material from the body. As commerce is carried on up and down our majestic rivers, so in human economy; the consumption is replaced by the blood. A system of barter and trade is carried on; one article left, another taken from the tissues. The air is the means used by the author of nature to accomplish this grand object. From this fact arises the necessity of having it in proper quantity and quality. Free pure air is the secret of health. This has been shown by so many invalids who gain their health by free air, combined with exercise, and care of the constitution generally. Sleeping in very close rooms is detrimental in the extreme to health. Free air is resuscitating, especially morning's freshest, purest breath. Persons in crowded cities need to seek the air more than those who breathe the purer air of the country.

FOOD. This has a powerful influence on the nature of the blood. System and regularity are valuable aids to health at any age, or in any condition of life. Meals at regular intervals, exercise in regular hours, and useful labor is of the greatest importance to health, wealth and happiness. "The first step from idleness is into some vice," said an idle, wealthy, pleasure-loving young man of my acquaintance, in his dying hour. "An idle body is the work-shop of the devil." Here is a great truth expressed by the tongue of a dissipated, reckless young man in an expiring hour. It was then quite too late to contract useful, happy, industrious habits. Again, fearful it is to believe the Christian doctrine of future rewards and punishments, when life is thus spent.

I am a strong advocate of vegetable food. This should be taken in regular quantities, and at regular intervals. The form of human teeth shows a design for them to be used in flesh-eating; yet I think vegetable food should greatly exceed in quantity, the animal. In warm climates, I think a vegetable diet more conducive to health. Meats and vegetables, happily blended, are not objectionable. The food should be well masticated. We will consider the subject more in detail under the head of digestion, circulation, &c.

We pass on to consider the clothing, which should of course be comfortable, and proportioned according to climate and season of the year, and natural temperature of the body.

CLOTHING. Natural history gives us a valuable suggestion in regard to clothing. The animals which inhabit different climates are furnished with skins and appendages to the skin suitable to their particular climate. In cold climates we have a bear with long hair, making a formidable covering against the cold. Nature has given them habits of torpor, which more perfectly adapt them to their climates. There too are cold blooded animals in this climate. In warmer climates we have animals differently organized. They have more delicate skin and hair. The plumage of birds, and even lovely nature herself, wears a different plumage in warmer climates. Flora has given her flowers and flowrets a more delicate texture, a softer, finer beauty. This admirable provision of nature seems to tell intellectual men how to dress to suit the season and climate. Clothing should be comfortable and well adapted. Avoid pinching boots and shoes, that are but little thicker than paper. Young ladies, avoid stays and tight lacing as positively injurious to form, grace, health, beauty, and symmetry of person. A vast amount of useless expenditure

is made for fine clothes in the United States. Clothing contributes largely to the comfort of the body, the earthly dwelling place of the soul. This makes it an object of proper thought in our investigations. The health of the body facilitates the education and improvement of the mind.

Due proportion between strength of body and strength of mind is the most desirable state of health. In this condition we expect the happiest results from mental discipline. Education, with bad morals, is a curse. It gives a wider field and greater success to evil. Education carries with it an influence either for good or evil. If the man has bad morals, education gives him the means of doing more evil than he could do without it. Thus it becomes a curse instead of a rich blessing. The same is true of wealth and position in life.

But a stout body, a strong mind, and good morals combined, make a perfect man. Children of strong piercing minds, who have a weak frame, ought to be encouraged to play, take exercise in the open air, have good attention paid to clothing, air, exercise, morals, &c., that the mind and body may be kept in *equilibrio* as near as possible. To obtain the best results of education the mind and body ought to strengthen together. If the mind does not

keep pace with the body, we see the bodily powers strong, the subject given to animal pride, prowess, sensation, passion, &c. If the mind is strongest, the body weakens and finally disease is established, their mind and body both sink. Strength of intellect combined with strength of body is the perfect man. However, this is very rare; nature is not prodigal of her gifts. She gives one health of body, another of mind; one beauty, another talent, which is superior to beauty; one wealth, another morals which is superior, and thus she distributes her gifts to the children of men.

EDUCATION OF INTELLECT. After considering the importance of moral training from the time of birth until maturity, and the preservation of the bodily powers, then to combine with these education or mental discipline is the greatest favor parents can bestow on their children. The out-flowing affection of a parent toward a child, must be intense, unless he will never watch over that child, day after day and night after night; consequent upon this demonstration upon the part of the parent, the child should feel the strongest paternal affection. This is what "Virgil" makes so lovely in *Æneas*, the hero of his poem. The Romans had a great contempt for a low trait of character; many of them preferred an hon-

orable death in preference to a disgraceful life. This was the result of both mental and moral training. It is the mind and will that makes a man suffer martyrdom. See how thousands have endured for conscience sake, the torments of the rack, the wheel and the cross. Others have given their bodies to be burned for some cherished cause or object. This is for the most part due to mental and moral training. The principle of suggestive ideas, as well as association, makes its impress on the youthful character. Who cannot remember suggestions they heard in youth which they still remember and are influenced by them yet? In no enterprise should public spirit run higher than the educational interests of the country. Public spirit is a disposition to promote the welfare of a community. We have a system of common schools which is a grand system, but it is badly carried out. The system is a good one, if carried out to the letter, but the trouble is in carrying it out. There is a saying, as true as it is old, that what is everybody's business is nobody's business. Here is one defect in the operativeness of the common school system. Another extreme difficulty is the want of competent teachers. It ought to be so that the salaries would justify persons to qualify themselves for teachers as a livelihood. As it now

stands, teachers, as a class, are entrusted with a responsible public duty; yet they have not been classed among the learned professions, such as medicine, law, theology, &c. Great facility may be acquired in imparting instruction; but above all, the teacher ought to know well what he attempts to teach. To have a faint, glimmering, flickering idea is not sufficient. He must know well before he can teach well. He must know the science of human nature in its buddings. Here is psychology, unsophisticated and pure. The school forms an intermediate place between the family and civil society. Children are a little community, and must be taught as such. The great trouble with teachers of the present time is, that they only make teaching a stepping-stone. From this stone they step to theology, medicine, law, mercantile pursuits, &c. The reason is that the wages are too low to confine qualified teachers, because if they are well qualified, they can get other business more lucrative and desirable to follow. Fustian and rant destroy good order in school. Brutal punishment has been numbered among the things that were, and deservedly so. Deep interest in the welfare of a child secures the best possible control over it. Parents, by proper training at home, can assist the teacher greatly, if they manifest an interest in the ad-

vance of their children. The children are soon aware of it, and their interest in books is increased, provided they have been well trained up to this time. If the teacher knows well what he professes to teach, he can simplify and systematize so that the childrens' tender minds can take the whole in minute portions. Oh! for the days of study and school! But what a bore college lessons were when passing over them! I thought if I were only in society I would be happy, but alas! I see the world is not all lovely. I thought mathematics, Latin, Greek and Hebrew were worse than all the world; dry bone anatomy, when I came to it, I wished for school-boy days and the mind of a child. But discontented we are in every part of life's magic ring; each segment longs for something more. Hope either spreads out her golden bow of promise, or fear's dire whisperings fill the soul. Often sweet memory may gild the past and cast its beauteous shade over the checkered scene of the past. In the education of the youth in morals, in body, in mind, in heart, rests the future of our republic as it merges from the dark cloud of war.

The great object in an education should be to evolve the principles of mind and morals. No system of education can be adopted to evolve genius from a brain that has no geni-

us by nature. Nature must furnish the materials of greatness and education must place them together to make them operative and useful. Every system of education should tend to prepare the youth for the trying relations of life. The horse improves his speed and activity by training before entering the race-course. So the youth is improved by mental training before entering the race of life. Education is of the greatest advantage to both mind and body, when properly imparted. It gives strength, vivacity and energy to all mental activity; it enables us to use our bodily powers so as to make life both happy and useful. Without labor, life is doomed to languish. There is no excellence without labor. Great care and assiduity are necessary to give reason her proper play. Improve the judgment, enlighten the understanding and exalt all the powers of intellect. Along with this, to give sensation and feeling their proper bounds and heighten moral sense, all greatness must have virtue for its basis: *gloria virtutem tanquam umbra sequitur*. A shadow never followed its parent object closer than glory follows virtue. Virtue, magnanimity, philanthropy and every other true greatness is evolved more or less by proper education.

MATURITY. No precise period can be made

to embrace the time of maturity in each individual. Some attain maturity earlier; others, age and decrepitude come on sooner, so that no precise period of time marks the years of maturity. Some girls are fully as mature at fifteen as others are at twenty-three. To make a very general statement, we place the time of maturity from twenty to fifty. Some run over that period even to seventy or beyond, but these are exceptional cases. At the age of maturity, when reason and moral sense should be the most powerful, we often see them least so. This is the period of life when ambition runs riot, and the passions flow with full tide; sensation often predominates over reason. Here is the struggle for professional greatness, the conflict for commercial gains; the play of life begins in earnest now. Every faculty of mind and body is called into vigorous activity; nervous force is expended in thought and action, health is sacrificed to obtain the dream of ambition. Sleepless nights and wakeful days, are alike passed in visions of wealth and notoriety. Health is always rendered precarious by extreme exertion of mind or body, yet it is true that moderate labor conduces, in the highest degree, to strengthen the power of mind and body. Strong mental emotions disturb the circulation of the blood as we have clearly proven.

It is not a matter of glimmering inference, but a positive tangible reality. Along with this we have an over-wrought condition of the nervous centre; this brings on diseases of enervation, defective digestion, defective nutrition and general languor of the entire system. The pale-faced emaciated specimen stands as a monument of human folly; hope, that seemed to spring immortal in the breast, now dies; energy has found an untimely grave; the rose-blown cheek is cadaveric with despair; the flower of life is forever blasted; the golden wand of genius has as mysteriously disappeared, as did the lamp of Aladdin. The charm-spell is broken, and the subject stands a mourner at the grave of defeated hopes. Between the years of twenty and twenty-five many become the victims of consumption. Phthisis-pulmonalis occurs in the greatest number at, or about, this time of life. Undue confinement to business, and over-anxiety of mind tend to develop latent tubercles. These, with extremes of temperature and other predisposing causes, operate to make the latent tubercles free. Those who are so disposed should guard against colds, be systematic in habits of life, have regular time for sleep, for meals, for exercise, for labor, for recreation. Observance of these suggestions will prove an invaluable guide to health.

Attention to these may not obviate entirely this and other pulmonary diseases, but will retard very much their progress, and in many cases prevent them altogether.

It is only our present purpose to hint at life as a whole; the magic ring is composed of segments. Maturity, we regard, as the perfection of the segments that made up the magic ring or round of life. We only hint at the great principles of health and disease. It will be our purpose in the after pages of this book to speak of diseases and their treatment. It is infinitely better to avoid disease than be sick and ever so skillfully treated; hence our motive in the present work.

AGE. Life at this period ought to be, and generally is, a fixture. Habits of mind and body have been confirmed before this time of life; position in life has been attained; type of character has been delineated; influence, whether great or small, has reached its maximum. Its zenith altitude now begins its declination. The harvest is now reaped which was sown in past years. If the foundation of bad morals, bad temper, and bad health has been deeply laid in other years, now the reward is received. If ambition has over-taxed mind or body, age will tell the tale of suffering, as a consequence resulting therefrom. Physical and moral evil,

to some extent, meet their punishment in this life with a high degree of certainty. This punishment seems to be only the bounty of the future punishment which threatens the wrongs of men. If men abuse their mind or morals, they suffer in reputation, character and wealth. If they abuse their bodies, they suffer disease and misery in consequence of it. Here, again, we are caused to revert back to the primary importance of Medical Psychology, as the richest source of human greatness and happiness. Let the weak-minded jeer at its importance, as many do, yet its importance will outlive a myriad of generations of such weak-minded persons. No condition of life is more interesting to me than that of age, when the mind is sound, vigorous, easy. It is the crowning point of human existence to preserve a sound mind in a *healthy body*. No diamond's richest value, or gem's rarest worth is at all equal to a prosperous soul within a healthy body. The adage, once a man and twice a child, confirms the truth of our subject, life a magic ring. Life is carried on by occult or hidden causes. The mysterious round of life makes it a ring of wonderful magic, in old age, when memory casts her golden shadow over the days of youth. The old man is not concerned half so much about the events which are now transpiring

around him, as he is about the events and associations which were his delight in youth. Here is the closing up of the ring. The man, after the energies, ambitions and avocations of life are partially suspended, goes back to childhood. He lives in the ideality of childhood and youth; sensation is blunted; the soul does not communicate with the external world by the aid of the five senses, with the same facility. The mind seems to feast on its already acquired store. Events of to-day are not half so bright in the mind as those of fifty years ago. Intellect proper seems to remain, but sense-perception has faded. The will has grown inactive; hence according to the philosophy of his own being, he closes out the magic ring of life. No reflection that stirs the human breast can be sweeter than to know that we have been educated so that life has been a blessing to ourselves and to our fellow beings. If we have known the laws of health, and so observed them as to enjoy good health, sound mind and morals, we have met the highest design of our Creator.

CHAPTER X.

THE HUMAN WILL.

Various and conflicting have been the discussions in every age and among every people, in regard to the human will. This subject is as old as theology or philosophy is antique. It is of such personal and practical importance, that it cannot escape the observation of every reflecting, intelligent human being. We do not propose to discuss it as a theological doctrine. Its relation to the mental operations as affecting the bodily organism, is our present field of inquiry. We have heretofore designated the will as the executive power of the mind. We have seen how the mind deals with the external world through sense-perception, or by the instrumentality of the five senses; how motion and locomotion was produced. The mind chooses or decides on some action or course of action. This decision is made up in part from circumstances which may or may not be under its control. However, the intellect weighs the motives for and against. Thus the

choice is effected. You remember the three great divisions of psychology were, first, Intellect; second, Sensation; third, the Will. Often the decision is between intellect and sensation, or feeling. These departments have often a different class of desires. There is a great diversity of influences, which may induce or modify the decisions of the mind. A severe conflict often is waged between feeling and duty, likewise between principle and interest, as the great mass of our motives rest for a base on the high law of self-love; a desire of happiness, as this is the first craving of human nature. The decision is often between the agreeable and the right, or the beautiful and the good. A faculty of mind is its power to perform some operation. The will, as a faculty of mind, is its power to execute its own volitions. The sources of evidence are, first, what goes on in our own minds; and, second, the concurrent operations of others. We do not have to traverse the heights of the star-lit heavens, or the hidden depths of the earth, for evidence. The evidence is at hand, and just as conclusive in its nature as the facts which support any other science. The phenomena of mind is just as conclusive as the phenomena of matter is to the physical philosopher. I love to bring common experience to the support of

science. This is my reason for noticing so many familiar sayings which show that the common sense of mankind approves the truth of science. In regard to an act of the will, we often hear persons say, I made up my mind thus or so. This is by no means an unapt expression. The truth is, that there is a reason for every action, whether that reason is known or not. Every intelligent action must of necessity be the offspring of reason. Reason decides between the motives, desires, feelings, influences, circumstances, etc. Circumstances over which we have no control, may afford motives. These motives influence our decision, yet we are free in our choice. To illustrate the truth of this, suppose a private soldier is commanded by a superior officer to set fire to his own house; is he not free to choose the penalty of disobeying orders, or to obey orders and risk the consequences? This is a very hard choice, yet the will is free to make the choice.

Accountability rests alone with him who acts freely. Man acts thus under any and every degree of divine influence. If divine influence presents a motive sufficient to influence his choice, he thus acts. When the motive is presented he is free to choose or reject. But if the motive is sufficient, he is sure to choose it and act accordingly. The relation of thought and

action has already been pointed out, and we need not again consider it. If man does wrong, it is because he chooses to do so ; or if he does right, it is because he chooses to do so. This is true, no matter what the number of circumstances, motives or influences, which determine his choice, may be. When feeling and duty, or obligation are arrayed in opposition to each other, if feeling is the guide instead of duty, it is because we choose it in preference to duty. The decision of the mind is made up in any case by deliberation on motives or consequences. The patient goes by an act of the will, and prostrates himself on the surgeons' table to have a limb amputated. What is the cause of this action ? It is because he expects to escape disease or death by it. This is a dreadful choice, but it is his own choice. This is a choice against feeling, but the motive is sufficient to influence the will ; hence the muscles, which are the obedient servants of the will, carry out the behests of that power. It was the iron will which made Cranmer place his hand in the flames and hold it there until it was parched to a crisp.

The way in which Divine influence inclines the human will is by presenting motives sufficient to influence the choice. This is consistent with the highest sense of freedom of the

will. The circumstances or providences may present the motives which influence choice. These circumstances or providences may be out of his control, yet his choice is free to all intents and purposes. The circumstances which gave rise to the necessity for having the limb amputated were perhaps beyond the control of the patient; yet he was, according to the strictest psychology, free to choose between the motives in favor of allowing the surgeon to amputate his limb or choose the consequences of disease and perhaps death. The will is free, according to the psychology of the human mind. The common sense of mankind regards it as being free. Courts of justice, judges, jurors, and laws, human and Divine, are all foolish fiction if the will is not free. If man is nothing but a piece of passive machinery, only acted upon by extraneous influences, there is no crime in doing wrong, nor reward for doing right. The human will must be influenced by motives which appear sufficient to influence it to action. These motives may arise from a pure intellectual desire, from feeling or from extraneous influences. Here is where the gospel may take possession of the will, and yet the choice is free, the motive is sufficient to influence the will and choice it; then the natural sequence action follows through. Circumstances and

providences may present different motives, yet the will is free to choose either motive. These different circumstances have different motives. Both classes of circumstances may be beyond our control, yet, in the strictest sense of psychology, we are free to choose one or the other. It is said a man cannot will to do what he has no inclination to do; inclination is altogether different from power. A man may have an inclination to dry up the ocean, but not have any power to execute that inclination. A man is, to a great extent, responsible for his inclinations. In the first place inclinations are by no means fixtures in quality, quantity, kind or degree. Motives change the current of inclination, no matter what the source of inclination may be. If it is from reason, feeling, moral sense, or from extraneous influences; whatever presents a sufficient motive will influence the will to make the choice. The choice may prove to be a dreadful choice, a choice ever afterwards regretted; it was his own free choice, notwithstanding he might have been misguided in choice, yet it was his own executive volition. Hence psychology teaches the will is free. Necessity is only a fancied cloak to cover the wretchedness of crime. The Creator acts on the will as free, and men act with each other as free. The philosophy of mind

teaches the will to be free. Hence the laws, human and Divine, to punish the wilful offender. Accountability rests alone with him who acts freely. As we consider the will, we must not forget that it is only the mind itself willing; that the will is not separate and distinct from the mind. Now we notice the will as governing all intelligent actions.

We have seen that the cerebral hemispheres were the seat of intellect, the headquarters of the mind. We have seen by amply satisfactory evidence, that the seat of sensation was in the sensitive nerves; also, that the motor nerves bore the behests of the will to the different muscles of the body. These facts at once complete the golden chain of communication to and from the occult soul, as it is seated upon her imperial throne, bearing the ensign of splendor and power, receiving telegraphic communication from the external world on an improved plan, and distributing its behests to the organs of the body, as if it had caught the spirit of ubiquity. The mind being seated in the cerebral hemispheres; the will being the executive power of the mind, the mode of action of mind on body is clear; the will acts directly on the motor nerves. The nerves furnish a stimuli which cause muscular contraction, which is the cause of all intelligent motion. Here, after all

the fog and mist of metaphysics is dispersed, is the rational, reasonable philosophy of mind and matter. Here common sense and philosophy embrace each other, not as fairy nymphs, but as domestic people. The heavenly bodies would exist if there were no astronomers to classify them and explain their phenomena. Likewise the powers of mind and their phenomena would exist, if there were no psychologists to study and explain them. Psychology is of the highest importance in respect to medicine, and in every other sense of the word. It marks the distinction between man and the brute; the distinction between a brutish man and a man of morals and intellect; the distinction between magnanimous or great action, and sinister or criminal actions. If you desire actions pure, cultivate pure thought. If you desire sin and misery, cultivate evil thoughts, and evil actions will follow as a sequence. If you would avoid sin and crime of every grade and hue, purify your imagination. It is in the secret pavilion of thought that men first become villains, long before they have gained strength of will to act them out publicly. When the imagination has kept evil thoughts before the mind until reason and moral sense are subjugated, then the mind decides the contest, the choice is made. The will executes the

decision of the mind; the motor nerves communicate the behests of the will; the muscles are the obedient servants of the will; they are moved; the act is done. The man is now a villain in thought and in action. The man is the architect of his own corruption; the despoiler of his own character; the donor of his own sin and misery. His choice was untrammelled; it was free and perfectly free. He did it because he chose to do it. He cannot act without the will; if he does, it is not an intelligent action. We would not impute crime to idiots; they have not reason to guide them in the selection of the right in preference to the wrong. For aught we know they may have latent minds over which they have no control; some bodily defect or disease may prevent them from having control of their mind. This control of mind is often lost by artificial causes. Why may it not be lost by natural causes? This control is often lost by narcotism, etherization, intoxication, etc. In sleep we lose control of mental activity; this is natural; the idiot may have a mind, the control of which is lost. This is only hypothetical, however, yet it seems to be a very reasonable conjecture.

Seeing, as we do, that every intelligent action is under the control of the will, and that the will is a faculty of mind, what can be of more

importance than *Medical Psychology*? Men of our own profession, from their insatiate thirst for money, neglect to study and understand the laws of their own being. Their thirst for a large practice makes them mere symptom-treaters, instead of men of learning and science. They tell you they have exhausted the whole catalogue of remedies on a certain patient, and he is no better. They never mention the physiological effect of a single medicine; they never mention the natural history of a single disease. This is empiricism and quackery in full blast.

Again, we are told by veteran practitioners, that if one thing does not do good, try another. They do not think of the physiological effect of the remedy, or the point of contact between the remedy and the disease, but use remedies at random, because they have heard they were good for a certain disease, and their experience seemed to confirm what they had heard. This too is routinism and quackery—a perfect reliance on specifics.

All this mode of procedure in the practice of the healing art, I hope, will soon be disposed of forever, and physicians will practice medicine from principles of science, instead of blind, blundering routinism.

To a skillful and scientific practitioner of medicine, psychology cannot be overlooked.

The will is the powerful engine controlling action. Knowledge of this element in human nature cannot be too highly valued by physicians.

The science of mind has a direct bearing on the science of medicine. It is not remote in its bearing on medicine, and cannot be made so. If you answer me that it is so mysterious, I reply that its importance runs parallel with, if not paramount to, its mystery. I do not conceive that Medical Psychology is so wonderfully mysterious, when viewed in the light of common sense and plain science. We do not have to visit the home of the stars, or the deep recesses of the earth, to learn the nature and office of the will. The evidence is at hand, in our own mind, confirmed by the universal concurrent experience of mankind.

CHAPTER XI.

THE CIRCULATION.

The derivation of this word is very obscure, yet the common idea of circulation is very well understood. Mr. Webster tells us that the word circulation is from Latin *circulatio*. The idea of T. Lividus is that the word *circum* around, and *latum* carrying, make up the word circulation, becomes very consistent. The difference between he and Webster is only in regard to the derivation of the word. The idea as applied to the circulation of the blood is the same. It is the idea of moving round circuitously and returning to the same point where the motion began. It is thus with the blood in circulation; it flows round in a continuous and interminable stream during the entire period of mortal life. The ancient Jews had a very correct idea of the blood when they regarded it as the life of the flesh. It is really the life-giving power of the flesh; the medium of disease and likewise the medium of health. It is endowed with the capacity of taking on idio-

pathic disease and consequent death. It contains and distributes the life-cells, and aids also in disseminating to every part and parcel of the body the death germs. Nothing can be more important than the study of sanguification, or the process of blood-making in the human economy. No man ever beheld a more beautiful, interesting and wonderful scene than the circulation of the blood as seen in the field of the microscope. The web of a frog or gosling's foot gives the best opportunity of seeing the phenomena of circulation. Nothing can be more beautiful than to see the undeviating, unerring constancy with which the blood corpuscles chase each other in the round of the circulation. Soldiers were never drilled to fall in line with half as much certainty and order as the blood corpuscles follow in the line of circulation. The honey bee from the time of its creation until now never made its comb with more regularity than the blood corpuscles array themselves to pursue the round of circulation. Nature in regard to circulation is a perfect systematizer. The harmony of circulation is infinite when all the organs and energies of the body are in a perfectly healthy condition. The primary divisions of blood when drawn from the body into plasma or liquor sanguinis, crassimentum or clot. The crassimentum is

composed of fibrin and corpuscles, red and white. The serum or liquor sanguinis is merely deprived of its fibrin by coagulation. The crassamentum is vital; hence, in considering the blood in circulation, our attention is directed to the fibrin and corpuscles. The other elements of the blood are only chemical compounds and cannot be considered vital. The fibrin and corpuscles are developed from the lymph and the chyle. No old corpuscle ever generates a new one, but liquifies and discharges after it has performed its office in circulation. The corpuscles exist in about the relation of one to two hundred. One of the colorless to two hundred of the colored. The office of the blood in the process of circulation is to furnish nutritive material for the support of the different parts of the body, and to convey the waste effete matter to where it can be expelled. It is like a system of railways, each depot receiving its own part of the cargo. The bill of lading is made out before the train starts and each particular locality receives its supply. Each organ and tissue receives by selective affinity its own supplies from the blood. The blood is a stream like one of our majestic rivers, which bears upon its beautiful bosom the articles which feed and nourish the inhabitants of the towns and cities along its tortuous route.

The amount of blood in the circulation is modified by age, sex, habits of life, and quality of food taken, whether animal or vegetable. Animal food increases the corpuscles, but not the fibrin. Vegetable diet reduces the corpuscles, and increases the albumen. The difference in the color of the blood in the veins and the blood in an artery is this: the venous blood is of a dark crimson color; the arterial is of a red scarlet color. The red color of the arterial blood is due to the presence of oxygen, received in the respiratory process in the lungs by endosmosis and exosmosis. The blood in the arteries is elevated in temperature about two degrees above venous blood. The dark color of the venous blood is due to the carbonic acid it contains. This is received from the waste and disintegration of tissue.

We are now prepared to see what a wise and wonderful purpose nature has accomplished in the circulation of the blood, which was first discovered by William Harvey, in the year 1619. What gigantic strides in the science and art of medicine since that time! The common people now know more of the treatment of disease than the best physicians did at that time. The march of medicine is onward, yet onward.

The red corpuscles are elastic, and change

their shape to pass through the capillary spaces. The white corpuscles are fewer in number, and supposed to be for nutrition. They do not change their shape to accommodate themselves to the capacity of the capillary vessels. All the organic coagulable substances of the blood are held in solution. The circulatory movement of the blood keeps them in this state of fluidity. Any disturbance, from whatever source it may arise, causes a tendency in the fibrin to coagulation. We know that there is a disturbance in blushing, turning pale, &c. Mental emotions cause a disturbance in the circulation. In blushing, the diameter of the capillary vessels are enlarged; here is psychical stimuli, just as certain as the existence of consciousness itself. Psychological out-croppings prove that mental impulses disturb the circulation, and disturb it powerfully often. This is the case in fainting from alarm or sudden intelligence. Here, then, coagulation and congestion may result directly from a psychical impetus. The nature of congestion is to oppress and depress the vital powers. We know that fear and grief are depressing agents to the vital powers. Press the rationale, and we conclude that these states of mind affect seriously the bodily health. No deduction in logic can be plainer than this. Without reflection, the

conclusion is seen to be relevant. Here, then, comes the light of Medical Psychology, like the golden sunlight of heaven, bursting through a dark cloud. Small exponents represent great numbers. Childhood shows the man as morning's freshest, purest ray shows the noon-day brightness. Develop the cell, and you have a living organism.

Fear blanches the cheek, modesty reddens it. Fear in a single night has silvered the locks that were as black and as beautiful as a raven's wing at twilight's pensive hour. Between nightfall and the rising of the sun this great change is wrought. Is not the influence of the mind powerful to produce this great change? It requires, in the usual order of nature, many years of time to bleach the hair. The soul, powerful in might, has wrought in one night what nature does in many years, undisturbed by the potency of mental emotion. The philosophy of mind is no idle dream; it is a sober, common sense reality; a thing of every day practicability. A man with one grain of individuality must feel the importance of a correct medical psychology. We know that the mind has a direct influence over the erectile tissue, such as the corpus cavernosa, corpus spongiosum, glans clitoridis, etc. The tissue of these are distended with blood, which causes their

erection. The entire weight of the blood in the human is not certain. It is estimated at one-eighth of the entire weight of the body. Thus, in a man whose weight is one hundred and sixty pounds, the blood would be twenty pounds. The media of circulation is the heart, arteries, veins and capillaries. These complete the circuit of the blood through the body.

THE HEART. The heart is a muscular organ. Its shape is conical, with its base inverted. It is five inches in length, three inches in width at its broadest part, and two and a half inches thick. The muscularity of this organ enables it to exert great force. The heart acting as a force-pump, gives the blood its first impetus in circulation. It continues to flow then onward by arterial and capillary pressure. The *vis a frontis*, or soliciting affinity of the tissues, seem to draw it forward. The heart is thus reinforced by the entire economy of circulation. The heart is composed of four principal apartments, viz: two auricles at its base and two ventricles at its apex. The ventricles contract with more force than the auricles. The ventricles dilate much slower than they contract; about three times as much time is required in dilatation or diastole as in contraction or systole. The systole of the ventricle propels the blood into the arteries and causes the pulse. The

collapse of the arteries corresponds to the diastole of the ventricles. The heart is a muscular organ, differing in one respect from all other muscles. The contractility or excitability of the heart continues when cut loose from the nervous system or *in vacuo*. The contraction of all the voluntary muscles result from nervous stimuli, and the nerves are stimulated by psychical impulse. The action of the heart is not controlled by the will. This is a vital phenomena which is not suspended or exercised at the option of the will. Its action is spirit-like, working ever and anon of its own inherent *vim*. The valves which prevent the reflux of blood from the auricles after the contraction of the ventricles, are the tricuspid valves in the left auriculo ventricular opening. In the right we have the mitral valve. The tricuspid valve is not entirely closed often; this furnishes a kind of safety-valve action. When the vessels of the lungs are overloaded a slight regurgitation may take place and insure safety from the extravasation of blood. The semilunar valves prevent the reflux of the blood after its propulsion into the arteries. The heart is the great centre of circulation; this gives the blood its primary impulse; the yellow elastic fibres composing a part of the arterial sheath, gives it tone and strength; the arteries being con-

stantly distended with blood, have an arterial pressure; the elastic fibres give the vessel a greater calibre when filled with blood. This principle of elasticity generates arterial pressure, which aids in carrying on that part of the circulation performed by the arteries. This arterial pressure is capable of direct, positive proof; it is only necessary to insert a glass tube into one of the arteries of a living animal; the tube when inserted is filled with blood to the height of five or six feet. This then gives us the measured scale of arterial pressure. This pressure reinforces the primary impulse of the heart and forwards on the life current. The arteries are kept filled by the continued action of the heart; their elasticity reacting turns the blood over to the capillaries. This vitalizing fluid reaches all the tissues of the body.

THE CAPILLARIES are very minute, anastomosing and inosculating blood-vessels. Their inosculations form a plexus or net-work. Their numerous ramifications and anastomosing form the meshes of net-work which we find displaying themselves between the terminal extremities of the arteries and the fine beginning rootlets of the veins. This extensive capillary net-work furnishes nutritive material to all parts of the bodily organism. Each tissue takes up by selective affinity, its own cherished food.

The circulation in the capillaries is slower than in either the veins or arteries.

THE VEINS form the remaining segment of the circle or round of circulation. The thread-like rootlets of the veins gather up the blood to return it to the heart, the centre of circulation, which we made our stand-point in tracing the circulation of the blood. The veins have not the degree of elasticity that the arteries possess; they have more white fibrous tissue, and are wanting in the yellow elastic tissue of the arteries. The veins are flaccid when empty; the arteries retain their rotundity and open calibre when emptied of their blood. The veins, for want of elasticity, have not the pressure found in the arteries. The forces soliciting the flow of blood in the veins, are the following: The movements of the chest in respiration; the contraction of the muscles under the control of the will. But paramount to the above is the capillary attraction operating on the venous circulation. The venous tubing gives no sensible friction to the blood in its passage like other tubes. The adaptation of nature is so perfect that the parietes of the veins seem to afford no impediment, but solicit the flow of blood. When the chest expands by the elevation of the ribs and the lowering of the diaphragm, this draws the fluids into the

thoracic cavity. If the ascent of the ribs and descent of the diaphragm is violent, it exerts a powerful influence on the venous circulation. The aspiratory movement of the chest is partly under the control of the will. Here again is a part for psychical influence to play.

The contraction of the voluntary muscles aid the blood in completing its tortuous circuit; it meanders back to the centre of circulation from its peripheral voyage. The voluntary muscles are in a state of alternate contraction and relaxation. They contract laterally, and shut off the circulation in the veins for the moment, until the tension is taken off. When they relax, the blood then pursues its onward flow. The contraction of the voluntary muscles is caused by a behest of the will. Here, then, psychology has a wider field of operation than in the respiratory movement of the thorax. The law of capillary attraction stamped on liquids by the author of nature, tends largely to elicit the passage of the blood in the veins back to the heart. This law of capillary attraction pervades all liquids, causing them to rise above their common level in the caliber of a tube. The activity of the circulation going on constantly, tends to crowd the blood into the distal extremities of the veins. This creates a *vis a tergo* which propels the blood forward in

the veins. The suction force of the respiratory movement, and also the suction power of the heart tends constantly to draw the blood to the centre of circulation. During active exercise the venous circulation is much more brisk.

We are now prepared to trace the life-current from the point it receives the first impulse until it returns to the same point, after completing its circuit through the entire body.

We commence to notice the blood from the time it leaves the left auricle of the heart until it returns to the same point, after visiting all the various organs and tissues of the body. Leaving the left auricle, it enters the great aorta, and is distributed to all parts of the body through the capillary circulation. The capillaries form a nexus or connecting link between the arteries and veins. After the blood has passed the capillaries, the rootlets of the veins imbibe the fluid and return it to the right auricle; thence to the right ventricle, and thence through the pulmonary artery. It is then gathered up by the pulmonary veins and returned to the left auricle of the heart. Then it enters the left ventricle again, ready to embark on its voyage of life. This circuit the blood performs with a surprising degree of rapidity. The circulation in the horse has been found by experiment to be completed in about twenty-eight

seconds. This must approximate to the time required for the blood to pass round in the transit of circulation.

The office of the blood in circulation is truly wonderful and quite as beautiful as it is wonderful. It is the vehicle which carries all the supplies of food which keep alive the tissues. A complete system of barter is carried on between the blood and tissues of the body, the arterial blood giving to the tissues oxygen and taking in exchange carbonic acid; the venous blood taking back the cargo of carbonic acid to the lungs, and bartering again the carbonic acid for the oxygen of the inspired air. Nature is a great practical economist in her business transactions. We have now taken a precursory glance at the life-current as it courses through the body. Psycical influence may retard or facilitate the transit of the blood in circulation. If mental emotion accelerates or retards the passage of the blood in circulation, the conclusion is logical that it must interfere very materially with the healthy and diseased actions of the organs of the body. If the inhabitants of an inland town receive their supplies from a train of cars and that train should fail to come in on account of being thrown off the track or captured, its inhabitants must suffer for supplies. Equally true is it that the

tissues of the body must suffer if the blood does not bring its wanted supply of nutrition. These supplies must not only come in every day, but every minute, to keep the tissues from perishing. The blood must bring fresh supplies of nutrition and carry off waste material, for if the waste remains it engenders disease and ultimate death. The supply and demand of nutritive material must be kept in equilibrio as near as possible to keep the system healthy. Equally indispensable is it that the waste material be borne by the blood to where it can have exit from the body. The human body is a wonderful, self-regulating machine. The mind is a secret, but potent influence, which locks or unlocks every movement of the body, like the detent locking or unlocking the movement of machinery, more complete in all its parts, more towering and sublime as a unit is the human body, whose life-current is the blood in circulation; whose master, driving, regulating wheel is the animated soul.

CHAPTER XII.

RESPIRATION.

Respiration is the act of breathing. This includes the inhalation of air, and also its exhalation from the lungs. The word from Latin is *respiratio*. The syllable *re* means again returns, continuance, etc.; the word *spiro*, I breathe. This gives the real idea of the process of respiration; the continued inhalation and exhalation of air to and from the lungs. This principle characterizes the entire animal kingdom. This is the provision of nature for the subsistence of every human being. The æration of the blood must go on; unless, immediate death ensues. Atmospheric air is formed for the lungs and the lungs for the air. There is a wonderful interchange of constituents between the air and the blood to keep the subject in health. In a work like this we do not propose to give the anatomy of the lungs. The reader is referred to works on anatomy for that kind of knowledge; my design is to give a very general outline. This, however, may be

of infinite importance to numbers of our race in preventing the numerous diseases which affect mankind. The air finds entrance to the lungs through two external orifices, the nose and the mouth. Air in its passage through the nose, seems much better adapted to the lungs than that which passes through the mouth, first, because the orifice is smaller and the entrance through the nose less direct; second, because the evaporation of saliva is not carried on so rapidly. The evaporation of saliva causes dryness of the mouth and fauces. The inspired air coming in contact by endosmosis and exosmosis, with the blood in the pulmonary surface or the lungs, it parts with oxygen and receives carbonic acid. The blood has, after the reception of the oxygen, a bright red or arterial color. This color is due to the presence of oxygen. The theory that combustion is carried on in the lungs alone, is disproven by the fact that the temperature of the lungs is not greater than other parts of the body. The blood from the veins is of a dark crimson color as it enters the lungs, and commingles with the air. It receives oxygen, which imparts the red or scarlet color. Only a small part of the nitrogen of the air is absorbed, on account of the tardiness with which it penetrates animal membranes. The æration of the blood keeps the

tissues of the body in a healthy condition on the principle of diffusion of gases. The dark crimson color of the venous blood is owing to the carbon it contains. This results from the disintegration and decay of the tissues. The process of respiration may be interfered with by states of the mind; the process is partly voluntary and partly involuntary; for the most part voluntary from the tissues during the process of decomposition. When the action of the lungs is retarded by the influence of the will, the *equilibrium* of circulation is disturbed; there is less blood in the arteries; it accumulates in the veins; therefore, it may engorge and dam up the portal system. Here again congestion of the liver and other hepatic affections may result. The writer had a severe attack of hepatitis, which he attributes mainly to over study; lasting gratitude to Dr. Gore, of Bloomfield, for his services to me. In active close thought the respirations are much fewer in number, consequently the blood is not properly ærated. The blood may thus be vitiated. This is probably the cause of so much enervation following studential habits. Notice yourself in profound thought, you will observe the slow respiratory movements; the action of the lungs being for the most part voluntary. When a person is watching the action of the

heart or the throbbing of the temples, this is at once increased, by the will suspending for the moment the action of the lungs. Hence so many persons conclude they have a disease of the heart. They suffer as much pain and suspense of mind on this account, many times, as if they had organic disease established in their bodies; and furthermore, the natural history of disease proves the power of mental emotion to establish diseased action. Hence the importance of a correct medical psychology to relieve this suffering. Psychology may be studied from the purest motives of philanthropy. He who labors for the public good acts from the *noblest motive*. Pulmonary diseases may be greatly aggravated by mental effort; violent emotions of any kind are detrimental to the normal activity of the lungs; whatever disturbs so vital an action must be a secret spring of health. The lungs are two in number; they are conical in shape; their average weight about forty-two ounces, the right lung being about two ounces heavier than the left. The lung of a male is heavier in proportion to size than a female. The nerves of the lung are received from the pneumogastric or sympathetic nerves. I take occasion here to state that I doubt very much the theory of sympathetic or

reflex action. It seems to me to be used only as a fortification of ignorance.

When men are pressed to the exterior margin of their knowledge, they then rely on reflex action to fortify them against farther attacks of inquiry. Investigation only proves the existence of two grand divisions of nerve fibres, viz: Sensitive and motor, *vasa motor*, &c. I cannot see that man needs only the two. The sensitive nerves convey all impressions from the external world, as we have shown. The motor nerves communicate the behests of the will to all the muscles and parts of the body. We are told that the sympathetic system of nerves is the system of organic life. I cannot see the point in such reasoning. It needs confirmation, to say the least of it. We have the sensitive system underlying the five senses, and giving us all the knowledge of sensation or feeling. We have the motor nerves carrying the behests of the will, causing all the various motions and movements of the body. In addition to that, we have the animated soul pervading the entire organism, taking cognizance of the condition of various parts of the body. The body is the habitation of this lordly principle, mind or soul, as we choose to call it. Dr. Bennett has presented a more rational view, calling it *diastaltic* or direct through minute

nerves which we are as yet unable to trace. I think it is the mind taking cognizance through the sensitive nerve fibres, instead of this mysterious mystery, mysteriously mystified, called reflex action. The theory of reflex action seems to be a palsied attempt to explain what is not understood by those who rely on it for a show of learning.

The lungs are wonderfully adapted to their office, but the same is true of all the organs of the body. In the lungs we have fourteen hundred square feet of tubing, as shown in Simon's chemistry of man. Along this vast extent of tubing, we have the air on one side of the moist, permeable, animal membrane, the blood on the other. The interchange of elements between the blood and the air is effected by endosmotic and exosmotic action. These two actions are told by the prefixes *en* in, and *ex* out of. They are from the word *osmose*, with *en* and *ex* prefixed to it. Osmose is a kind of molecular attraction, very nearly allied to adhesive; gases, and liquids of different density tend to equalize their density by osmosis. This is the nature of the aeration of blood in the air vesicles of the lungs. The oxygen of the inspired air passes through the pulmonary membrane by endosmosis, to unite with the blood. The carbonic acid of the blood passes

out by exosmosis into the air tubes, and is exhaled at each expiration. Here, then, is the process of life and death working alternately; the oxygen of the inspired air supporting the waste of the tissues. The carbonic acid of the expired air is the waste material from the tissues of the body. Here is life and death on the most delicate scale; here is wisdom profound. Either Minerva or the All-wise Creator must be the architect of this wisdom. It is here found in the richest abundance, let Minerva or our Heavenly father be the author of it. Of course we are not heathens to believe in Minerva.

I have been diffuse in describing the action of endosmosis and exosmosis, but I am writing for the common people as well as the medical profession, yet I have seen doctors, many of them in our towns even, who did not know the meaning of these terms.

The termination of the air vesicles in the lungs is by lobules or islets. The interstitial space between these lobules is made of yellow elastic tissue. This elastic tissue gives the elasticity and springiness to all parts of the lungs. In asthma this tissue loses its elasticity. This is the cause of the short-drawn breath. A full, deep inspiration cannot be taken on account of the stiffness of these tissues. No dis-

ease in all my practice has elicited so much sympathy for my patients as asthma. It is a most distressing disease, especially in old persons. When this tissue is very elastic, the capacity of the lungs is increased; the volume of air is greater; respiration is full and complete; the aeration of the blood is perfected. When stiffening of the elastic fibres prevents a large volume of air from entering the lungs, the breath must be short-drawn to carry on the vital process. If you take a bellows of small capacity, you have to make more strokes to create a given heat by blowing the flame than if you have a bellows of greater capacity. So with the lungs in carrying on the vital process. This is why asthma is so very distressing, the air in the lobules and air-passages and lungs becomes rapidly vitiated, and must therefore be expelled from the lungs. The air is made a vehicle to bring nutritious matter to the tissues of the body, and carry off effete material from the body.

The expansion and collapse of the chest in respiration is effected mainly by two sets of muscles, the intercostal and diaphragmatic muscles. The amount of air used in respiration in a day is estimated at about 350 cubic feet. The entire quantity of inspired air is not changed immediately and then exhaled from

the lungs; there is a residuum of air left which is afterwards exhaled. The oxygen and carbonic acid in the blood-globule is held in a state of solution. The proof is that they can be obtained in this form by the use of an air-pump. The free air of nature as it enters the lungs contains 21 per cent. of oxygen and 79 per cent. of nitrogen. But little of the nitrogen is used because it is so slow to penetrate the animal membranes. The air when examined after passing through the lungs has lost oxygen. It has gained carbonic acid and absorbed the vapor of water; there is a minute quantity of animal matter in the expired air. This gives a slight odor to the breath, and not so mighty slight either, to the breath of some. This is the cause of bad breath in dispeptics. Carbonic acid in the blood is the result of decomposition from the tissues in the vital action of secretion and excretion. Respiration, to some extent, is carried on through the skin. A limb confined in an air-tight jar effects the same changes in the air contained in the jar that respiration does in the lungs. On this principle, animals in water, many of them, respire. They absorb gasses through spiracles or apertures in the skin which they can close at pleasure. Frogs and some other amphibious animals

breathe thus in water while their lungs are inactive.

Prof. Scarling found that a greater quantity of carbonic acid was exhaled during the time of digestion; greater, also, when the person is awake than when asleep. Exercise caused a greater amount of carbonic acid to be exhaled, and fatigue diminishes the amount. This results from exhaustion being carried so far that the tissues have not the carbonic acid to give off. We have seen the effect of mental emotions in depressing the vital action. Respiration, we have seen, is influenced in part by the will. Cheerful trains of thought, pleasing emotions of mind, ideas of the beautiful and the good, the gilded memories of the past, the golden pleasures of hope, the delightful reveries of imagination, all have an influence over the vital actions, respiration, in common with all the rest of the vital actions. The sovereign arbiter of nature has made all his animated creatures to subsist in part on vital air. Oxygen is vital because it is indispensable to life. Air is none the less valuable on account of its abundance; it not only prevades our little theatre of passion and action, but perhaps the entire created universe, for aught we know. Air is naturally fitted for the lungs and the lungs adapted to the air. Respiration is the

process by which its resuscitating, vital action is effected in purifying the blood, the life-current, the medium of health, the medium of disease. The ambrosial stream of life is thus kept pure from the vitiating influences which destroy human bodies. If impure, the air sweeps away human beings as some deadly Upas.

CHAPTER XIII.

THE SKIN.

THE SKIN is an external membranous envelope, enclosing the body. It is composed principally of fibrous tissue. It contains some traces of yellow elastic tissue, but the proportion is very small. Its tenacity makes it a valuable covering and protection for the deeper tissues. In treating of the five senses or sensiperception, we described the skin as possessing sensation in all parts of the body. The sensitive papillæ are situated on the surface of the cutis vera or true skin, so called in contradistinction to the cuticle or scarf skin; the scarf skin, which is the covering for the true skin; the true skin contains numerous blood-vessels, lymphatics and nerves; the flexibility and toughness of the scarf skin adapts it to its several offices. This part of the skin regulates absorption and evaporation from its free surface. The true skin contains the sweat-glands and the appendages of the skin.

ABSORPTION, from *ab*, the beginning or prime

point, the centre of influence, etc. ; and *sobore*, to suck in. The true and tangible idea is the sucking or drawing in to the centre of influence, whatever may be the subject of attraction. Absorption, as confined to the skin, acts on the principle of endosmosis, which means the pushing through an animal membrane some liquid or gaseous substance. We know by positive experiment that a respiratory action goes on through the skin. Oxygen is absorbed by the blood in the capillaries and minute blood-vessels. Liquids are absorbed in the same way by endosmotic action. The skin is an animal membrane much more dense in texture than many other membranes of the body ; yet the texture and continuity of the skin is just what its object and office demands that it should be. The skin has a most important office in the economy of nature to perform ; it regulates the absorption and evaporation. If either the process of absorption, exhalation or evaporation is too active, the consequence is a disturbance in the circulation of the blood. If absorption by the skin is too great, the minute blood-vessels of the skin and contiguous parts may contain so much vapor and gas, taken in from the atmosphere, that they are so loaded the circulation of blood in them is impeded. Here then is an obstruction which might prove disastrous

to the health of the subject. Even the blood itself may be vitiated by the superabundance of watery vapor from the air. Impure gases may cause the same phenomena by poisoning the blood. Malarious, or the class of diseases denominated *zimotoic*, is supposed to result from a principle in the air, causing a ferment in the blood. We have a large class of diseases resulting from malarious causes. Endosmosis causes fluids to push through the pores of the skin and find their way into the life current; there they deposit their poison and exert their baneful influence. The same effect is often produced on a larger scale by the lungs. The skin acts in this way, and no one of science can doubt it. Absorption by the skin is of high importance to health; it conduces largely to health; this is our only reason for noticing it so carefully. Thousands in this way may have their minds turned to a secret spring of health, and obtain the blessing thereby.

EVAPORATION is the act of passing off in vapor; the word is from *e*, out, and *vaporare*, to emit, send forth. This gives us the idea of sending forth vapor; in like manner vapor and steam is sent forth by warming a vessel of water. This process is called insensible perspiration when the particles of vapor are so small as not to be seen; when the particles of

vapor can be seen we call it sweat, or perspiration is a little more fastidious in sound. The true and classical idea of perspiration is breathing through the skin. The prefix *per*, through, and *spirare*, to breathe, make up the idea of breathing through the skin. The skin then has a very important bearing on the process of evaporation. When evaporation, by exosmosis through the skin, is too free, the vaporous part of the blood is liable to escape and cause serious trouble. The texture of the skin is so arranged as to regulate this action.

Nature gives us a valuable hint on this point when a portion of the skin is removed from any cause. To prevent too great determination of fluids to the free surface of the body, she pours out a waxy, ceratic exudation which forms a scab. This diminishes evaporation, until the vital changes replace the skin over the denuded part. All practice in medicine, as it imitates nature, approximates to truth and perfection. If evaporation is too free, the great determination of fluids to the denuded part would engender irritation and inflammation. The death of the part would be the probable result. The spontaneous effort of nature precludes this result by forming a scab, which prevents such a dire effect from evaporation. Many persons say when they put on sebaceous

substances, they do it to exclude the air. The science of the thing is, that it prevents evaporation from the surface, and this keeps the circulation in the part in a natural condition. But for some intervention, either natural or artificial, the blood would be in great excess in the part. The serum of the blood would be effused into the extravascular spaces. This is one of the lesions of inflammation, the most signally important one too. When once the effusion takes place, certain cell changes must be effected before the effusion can be removed. Vital action must relieve the disease. Heat and moisture aid in the formation of cells, which remove the effused material before the part can again be healthy.

Hair consists essentially of the same chemical composition as the epidermis. The root of the hair is lodged in an involution of epidermis. This involution is called a hair follicle. The hair is only an appendage of the skin, with the same chemical composition. When the scalp is healthy, the hair grows much more luxuriantly. When *ptyriasis* attacks the scalp, and the hair is full of dandruff, the hair is apt to become dead and fall off. The same phenomena presents itself after an attack of fever. The hair then falls off because the scalp is left parched and dry, as the grass is killed by

drought. Occasional frictions over the skin by rubbing and ablution, is good for the skin. But evaporation may be made too active from the surface by a continuance of the practice, and some cutaneous eruption result. Judgment must be used in repeating ablutions. We know from the analogy of animals, that rubbing promotes the growth of the hair. See what a lustre and silkiness is added to the horse that is so frequently rubbed. The hair deriving its supplies from the epidermis, it follows that rubbing is good for the health of the skin.

The perfection of all law in regard to keeping the skin in a healthy condition, is to use such precautions as will regulate endosmotic and exosmotic action, keep evaporation and absorption in equilibrio. This is the median line of health and disease. Whatever interrupts these processes militates against the normal condition of health.

CHAPTER XIV.

DIGESTION.

DIGESTION, the act of separating the nutritive from the non-nutritive parts of the food. From *dis*, separation, and *gerere*, to carry. The idea is to separate and to carry the elements of the food after separation into nutritive and un-nutritive portions. This is the true idea of digestion. The elements of nutrition are carried to the tissues of the body; the debris or refuse material is carried to where it can find exit from the body; the food, when first introduced into the mouth or even into the stomach, is not adapted to enter into the nourishment and support of the tissues of the body. It must undergo certain changes before it can be chemically prepared for reception by the tissues of the body. Each tissue by its own selective affinity, takes from the blood its cherished supply of nutritive material; the food must be dissolved by the process of digestion before it can

have access into the blood to be distributed in the circulation to every part of the body.

INSALIVATION, the act of saturating the food with saliva during mastication. The flow of saliva from the parotid and sublingual glands is greater during mastication. The submaxillary pours out its saliva more when the food reaches the pharynx; it aids in the act of swallowing or deglutition. The parotid saliva is clear and limped, and of about the consistency of water. The saliva from the other glands is more of the consistency of syrup. The principal use of the saliva is to soften the food and prepare it for absorption by the stomach. It is very important that mastication be perfect. The teeth, 32 in number, are to pierce and mangle the food so that it presents a greater surface for the absorption of saliva. If mastication and insalivation are complete the stomach is relieved of a great part of the action it must otherwise perform in order to prepare the mixed mass of food for absorption into the circulation of the blood. The habit of eating so rapidly or swallowing down food in so crude a state, is very unhealthy; it imposes too much on the stomach. The stomach may heroically perform the herculean task, but there is great danger of dyspepsia or painful digestion following a course of this kind. The food is trit-

urated and disintegrated by the teeth, moving of the jaws, tongue and cheek, until the entire mass becomes of the same consistency, and is thus reduced to a plastic, pasty mass, ready for the semi-involuntary act of swallowing. The insalivation of solid food facilitates greatly its passage through the *æ*sophagus into the stomach. The most recent and exact experiments serve to show that saliva is poured out in proportion to the dryness or moisture of the food, it is much more abundant when the food is dry than when it is wet. If the food is liquid, such as soup, milk, &c., it is not intermixed with saliva, but goes into the stomach as it enters the mouth. From what has been stated above, the saliva is mainly to assist in mastication and digestion. Saliva is about nineteen twentieths water, and if the food contains a large proportion of water the insalivation is not so indispensable. If the food is dry and hard, insalivation is necessary. Vegetable food is cooked to soften it and prepare it better for digestion; animal food is also softened by boiling or other culinary processes. The process of cooking gives the mass of food a softer consistency and prepares it for the action of the gastric juice in the stomach. In addition to the softening of the food by cooking, it adds a flavor to the taste which makes it more acceptable.

I am a strong advocate of milk as an article of diet, because it contains so many elements of nutrition. Some medical men, however, oppose its use, without any just reason for so doing, in my judgment. Soup, milk and other soft or fluid articles of food do not task the secretion of saliva or gastric juice, and for that simple reason I regard them as healthy. In the economy of digestion a proper admixture of animal and vegetable substances are most conducive to health. If the patient is plethoric or fleshy, vegetable food ought to predominate. If enemic, or disposed to consumption, a good degree of animal food, or azotised substances ought to be eaten. This gives supply to the rapidly wasting tissues. It is for this cause that old whisky does good in consumption, by preventing the disintegration of tissue, and aiding in the formation of new. Here is the secret of bloating, by the free use of the article, the face portraying the habit of dissipation; the tremor of the nerves reporting the inordinate use of cerebral stimulants. In a medical point of view, what is true of all medicines, is true of whisky: that which is capable of doing much good when properly used, is capable of doing much harm when improperly used. I doubt not that whisky injures many more than it does good. I am bound to admit

that it does good in stimulating the stomach in digestion sometimes.

We now pass on from the contemplation of insalivation, as a part of the digestive process, to stomach or gastric digestion.

GASTRIC DIGESTION, the changes which the food undergoes in the stomach. The muscular fibres of the stomach, by their alternate contraction and relaxation, cause a vibratory or waving motion, called peristaltic action. This mixes the food with gastric juice, and separates the parts already mixed with gastric juice from those not yet mixed. The gastric juice is secreted by the follicles of the gastric mucous membrane. It has a very decided acid reaction. Lactic acid is the principal acid element in the gastric juice. This is necessary to chymification. Pepsin, a protein compound first discovered by Wasman, is the active agent in gastric digestion. Gastric digestion is interfered with by too high or too low a temperature. Extremes of heat and cold interfere very materially with the proper digestion of the food in the stomach. The supply of gastric juice is furnished according to the demand or quantity of food to be digested. Any tendency to dryness or inflammation of the stomach prevent the secretion of gastric juice, and unfits the organ for performing the duties of digestion.

Nervous influence has a decided power over digestion. Irritation of temper, anxiety of mind, anger or vexation will interfere or suspend entirely the digestive process in the stomach, which is by far the most important part of the digestive process. The chyme as it leaves the stomach, holds animal matter in solution. On entering the duodenum, the chyme is subjected to the action of three different fluids, viz: the intestinal juice, the pancreatic juice, and the bile.

The combination of intestinal juice, pancreatic fluid and the bile, with the chyme from the stomach, forms a more permanent emulsion. Bile mixed with pancreatic juice, has the power of digesting animal substance which may have passed the stomach. The intestinal juice converts starch into sugar and prepares it for absorption into the circulation. The bile acts on fatty matters and renders them more susceptible to absorption. The bile is nature's own cathartic; there is reason to believe the bile stops too rapid chemical action. The muscular action of the intestines, caused by the matter contained in them, is not under the control of the will. The mind does not control this muscular action, but retards or suspends the secretions, which are necessary to perfect digestion. Any disturbing emotion of mind occurring five

or ten minutes after the food is taken into the stomach, may retard or entirely suspend the secretion of gastric juice. You can call up days in your own life when you had some disturbing mental emotion just after a meal, and you suffered all that day or night, as the case may have been, with indigestion. It does not require any circumlocution of words to show that the mind presides pre-eminently over the process of digestion. Any violent emotion of mind interferes or suspends digestion for the time being; and it may, and often does impair the digestive apparatus for some time afterwards. May not this plant the seeds of organic disease? Yes, according to the highest dictate of reason and philosophy, it may. The natural history of disease, the philosophy of mind and body, all bear witness to the same shining truth. The weak-minded and unlearned may try to ignore this truth, but crush truth to the earth and it will rise again in splendor and beauty. Phenix-like, it will rise from its own ashes and reign in despite of all opposition. The oily material has not yet been disposed of; when this is disintegrated and ready to enter the circulation, the emulsion is complete. The pancreatic juice perfects this emulsion by disintegrating the oil globules. The absorption of fatty or oily matters does not take

place in the stomach. The temperature of the oil globules is elevated, and they are prepared by the stomach for absorption into the circulation after they have passed the orifice of the bile and pancreatic ducts in the duodenum. Hence we see the digestive process commences in the stomach and is carried on throughout the entire length of the small intestines. The food on its entrance into the stomach, comes in contact with the gastric juice; this forms albuminose by its action on albuminoid matter furnished by the food. The pancreatic juice forms an oily or fatty emulsion. The intestinal juice transforms the starch into sugar.

Thus the entire waste of crude material is prepared for absorption. The debris or refuse material of course must be excepted. The refuse part of the food is about one-seventh of the entire mass that enters the stomach. Below the ileo-cæcal valve the effete animal matter is excreted into the large intestine for expulsion from the body. This part of the intestinal track does not carry on the process of absorption, but separates and discharges the refuse material of digestion, both animal and vegetable. Although the muscular action of the intestines in digestion, is not controlled by the will, yet the gastric, biliary, pancreatic, and all the other secretions of the body may

be disturbed or suspended by strong emotions of the mind; hence these are effected by the state of the mind. The will is nothing but the executive power of the mind. The mind has the power to execute its own volitions. This power varies greatly in different persons. Some are faint and weak in regard to the efforts of the will, while others are nothing daunted by opposition. It is he who has reason and moral sense to guide his strength of will, that must rise to greatness and renown. Ignorance must foster disease. See how epidemics and pestilences sweep with devastating power over the nations uncultivated and uneducated.

Digestion, we have seen, dissolves the food and prepares it to nourish the different tissues of the body. The food is dissolved by the combined action of the different juices with which it meets in its transit through the intestinal track. After the food has been dissolved, it is then suited to endosmotic action, by which it enters the circulation and runs the entire round, supplying the vast number of tissues which are requisite to form the human body and preserve it from waste and decay. There are many and various processes which must be carried on in harmony to sustain the life and health of a human being. One process is related to and dependent on another process, just as one part

of the community is dependent on another. When this dependence is felt and accompanied by corresponding action, then society rises to its highest perfection. When the farmer realizes his dependence on the mechanic or the tradesman, and conversely when the mechanic or tradesman feel their dependence on the farmer, and act accordingly. So it is with every member concerned in the digestive process; it is when they act in concert and receive mutual aid from each other that the highest benefit accrues to the subject. Mind is not an organic member concerned in the digestive process, but exercises a powerful influence over it, and happy is he who knows how to regulate this influence.

CHAPTER XV.

SECRETION.

SECRETION. The general use of the term is what we insist upon as more directly corroborative of the effect of mind over the health of the body. Its use here will be to set forth the hidden process by which a portion of the circulating current is taken into the texture of the body in nutrition; the process by which each tissue by its own selective affinity secretes such parts of the nourishment furnished it by the blood in circulation. We have seen how the food, taken into the stomach and subjected to the action of the fluids secreted by the intestines, pancreas and liver, was prepared to nourish the bodily organism. The tissues absorb from the blood in the capillaries such parts of the blood as is destined to be transformed into living tissues. Nutrition and growth involve absorption, secretion and excretion; but the process of secretion as forming an important part of the nutritive process, is the point of in-

vestigation. In the wonderful process of nutrition the alternate action of secretion and excretion give due nourishment, preserve form and continuity. The process of secretion and excretion keep the supply and waste of tissue in equilibrio. If secretion is too active, hypertrophy is the result. This is an abnormal or diseased action. If, on the other hand, excretion is too active, atrophy is the result, and this is equally a diseased lesion. The tissues themselves exert an attractive and selective force. The attractive force draws the element from the blood in the capillaries, and the selective affinity appropriates it to its destined secretion. The liver receives its nutrition from the blood, and at the same time secretes bile. The kidneys secrete urine; cell after cell is appropriated to the tissues by secretion. If, from any cause, this secretion becomes morbid, we have preternatural growths, puss cells, etc. Inflammation may arise from stagnation of the current of blood. We have seen that the circulation of the blood may be disturbed by mental emotion, as in blushing, alarm, fainting from sudden and dreadful intelligence, the act of vomiting from looking at different ghastly objects. A bleeding aperture will cause fainting in one, vomiting in another, etc. This effect is produced through the mind; nothing reaches

our bodily organism to cause it, except the mind takes cognizance of the scene through the sense of sight. Secretion, general or local, is influenced in a very high degree by the mind. Melancholy, that enshrouds everything with gloom, is detrimental to secretion. Anxiety, constant mental turmoil is opposed to the function of secretion. While it is true that this class of mental emotions retard secretion, it is equally true that emotions of the opposite nature increase secretion. Hope and cheerfulness support the process of secretion, as the buoyant power of the water supports all objects resting on its tranquil bosom. Every tissue has its own selective affinity. No tissue or set of tissues can vicariously perform the office of another.

It may happen that one secretion accelerates or retards another, but never that one set of glands or secretions perform vicariously the office of another. The liver does not secrete urine, nor the kidneys bile, under any circumstances or complication of circumstances. Hence they must be endowed with elective and selective affinity. They attract and secrete material for their own subsistence; the shape and structure of the part may be changed by too abundant secretion; hypertrophy of the organ or part may result in consequence of too abun-

dant secretions. Dropsy of any part may result from too abundant secretion and defective excretion. When the secretion is too scant to supply the waste of tissue we have a disease of innervation, because it is a disease when it departs from the normal or healthy equilibrium of secretion. Secretion, to preserve the best possible health, must be equal to the waste and disintegration of tissue, after the subject has received its full growth. When growth is to be attained the secretion must exceed the waste in order to produce growth. If the secretion is healthy the growth of the part will go on and not interfere with the general health of the patient. If the secretion is morbid or diseased, it will support diseased growth according to the nature of the secretion. The cells secreted may be tubercular, cancerous, piogenic, serous, &c. The diseased growth will be determined by the nature of the cell secreted. Cell life and cell death have to do with every state of health and every state of disease. The cell is the simplest form of life—the simplest and most ultimate form of death. This theory may appear infusorial; it is, however, confirmed by the most exact science and approved by the profoundest philosophy. As one who detests routinism and empiricism in the practice of medicine, I am obliged to receive what science

and philosophy demonstrate. It is disgusting to me to sit with a doctor who is bloated with self-conceit, and hear him tell of the wonderful cures he has performed and at the same time never mention the pathology of the disease, or the physiological effect of the remedy, or what active agent met the morbid condition, their minds were as dark on such subjects as night. Such doctors, in my judgment, have yet to learn the very alphabet of scientific practice, although they may drive the finest horse and buggy in the country, and common men may even boast of having seen such a doctor. A large practice does not prove qualifications, but it does prove the man knows how to play the strings of human nature. Take from such a man the *vis medicatrix natura* and the influence of mind which he can wield over the patient in consequence of the confidence the patient has in him, and you at once rob him of all his glory; the pride of wealth and the charm of beauty all vanish from the semi-frenzied quack. The anatomical dry-bone skeleton never looks more uncomely than a doctor of the description mentioned would look if deprived of the influence of the mind over the health of the body and the *vis medicatrix natura* of disease.

There is an obvious tendency in disease to

cure itself. The mind has a wonderful influence over the body, both in disease and in health. The two facts above stated does more to foster quacks, patent medicine, homœopathy, etc., than learning, science, philosophy, skill, and all else besides. Then why shall not the common people know the powerful influence of the mind over the body in health and disease? It is only when this principle is understood that it can be usefully applied to the preservation of health, and to the aid of remedies in removing disease. Thousands are daily groaning beneath the pressure of diseases of enervation. The conclusion is *prima facia* that many emotions of mind, such as fear, melancholy, anger, anxiety, great exertion of mind, oppose the cure of this class of diseases. Secretion is below par, that is the cause of enervation. The class of mental emotions above given depress and diminish secretion, which is already below par; therefore they oppose the cure of any disease that tends to oppress or depress the vital powers. This is no high-wrought picture of mental influence; it is a sober, common-sense reality. Every one can call up in his own mind instances to confirm the truth stated. Facts bear up medical psychology. It is no foolish picture, but a practical and important science. We have the presiding soul

commanding the functions of the body, and conversely the functions may influence the mind just as secretion and excretion are counterparts of each other. Sensibility is a property in nervous texture that renders it capable of receiving impressions. The consciousness or knowledge that the mind has of such an impression being received, is called *sensation*. The nerve fibres that receive impressions are called *sensitive*. The nerve fibres which carry the behests of the will to different parts of the body, are called *motor*, sub-divided into *vasa, motor*, etc. Hence, if both motor and sensitive fibres are distributed to the part, if the part is pricked, the sensitive fibres apprise the mind of it. The mind receiving the impression through the sensitive fibres, acts upon the muscles through the motor fibres; therefore we have motion or convulsion as the result. This is the *modus operandi* of mind and body. Mind acting thus it must be powerful in aiding or retarding secretion. We have seen how vitally important the process of secretion is, and we have the *rationale* of reason for ascribing such importance to the invisible soul.

CHAPTER XVI.

EXCRETION.

EXCRETION, the act of throwing off refuse matter from the system. This process equalizes the bulk and form of the body. The process of nutrition or secretion preponderates until the subject is fully grown; then the process of secretion and excretion are about equal. The process of secretion and excretion might seem strange if we did not know that the body is continually undergoing change to keep it in health. Each tissue is a miniature digestive apparatus, taking its nourishment and casting off its waste effete matter. We have heretofore considered the office and action of the skin in absorbing and excreting impurities from the system. A large quantity of vapor is eliminated and excreted by the sweat-glands; this is called insensible perspiration, when the vapor is taken up by the air as fast as it comes to the surface of the skin. When perspiration is so active that the air cannot take it up, it then

forms in drops and is called sensible perspiration. Perspiration is going on all the time at every moment, whether it is sensible or insensible. Sweat is a much more correct word to express the idea than perspiration, unless we say sensible perspiration. Sweat cannot mean anything but the collection of vapor in drops upon the skin; perspiration means the transit of vapor, either in a sensible form or an insensible form. Along with the excretion from the skin we have excretion from the pulmonary surfaces; this is carried on by endosmosis and exosmosis. The interchange of fluids and gases is wrought in the process of respiration by the lungs.

We have seen by investigation that the skin carries on the same process, to some extent, that is carried on in the lungs by exosmosis. Hence the importance of keeping the pores of the skin open to perform well its office. In some cases it may be desirable to throw more of the action on the lungs to make them more active, and the skin less so. The amount of matter taken into the stomach of a healthy man, is estimated to be about seven pounds in twenty-four hours. A man weighing one hundred and forty-seven pounds, would secrete and excrete in twenty-one days, a weight equal to the entire weight of his own body. The prob-

able amount of fluid and solid matter lost by the skin and lung surface, is about two and one-fourth pounds per hour. The skin excretes eleven, and the lungs excrete seven grains per minute. The remaining excretions are from the kidneys and bowels. From the kidneys we have urine excreted. From the bowels feces are excreted.

We have now considered the great process of growth and nutrition; along with that we have considered the disintegration and waste of the tissues of the body, which we find to be wonderful. How a man can study medicine in the blazing light of science and be skeptical, I cannot tell. It requires some morbid perversion of reason and learning that I cannot diagnose.

We are now on the verge of leaving the wonderful yet practically important subject of psychology in its relation to the health of the body. We have considered the influence of the mind over the health of the body, because it was the medical point of view that we were considering. If it had been the psychical philosophy that made the point of investigation, then we should have considered the influence of the body over the health of the mind, which would be a very important subject to a writer on psychology proper. Our purpose has been

to consider psychology only as it relates to the practice of medicine and the laws of health. Health, usefulness and happiness are synonymous in a physiological point of view. Thousands of our race would receive incalculable advantage from a proper knowledge of the mind's influence over the body, both in health and disease. Psychology and medicine, like secretion and excretion, are only counterparts of each other. We in a short time must pass to the consideration of the most common diseases of the country, and their rational treatment. The effort at evolving psychological medicine has been put forth by a *young man*. If it contains imperfections, as all human efforts do, consider that *the public good has been the ideal* which has been all the while in the mind of the writer.

CHAPTER XVII.

SKETCH OF PRACTICE.

SECTION I.

REMARKS ON PRACTICAL MEDICINE.

MEDICINE, as well as law and gospel, when pressed to its ultimatum, proves itself a remedy for evil. Every blessing which man enjoys is estimated by its comparative value. Health is of infinite value, compared with the sore pangs of disease; joy, when contrasted with sorrow; hope, with fear; cheerfulness, with melancholy; pleasure, with pain; approbation, with remorse; law, with confusion, &c. Medicine has for its object the prevention and curing of the numerous diseases which afflict man throughout his entire existence, from embryo to the close of life. The notions and views of correct practice in medicine, like everything else, are as various as the minds of men. We have demonstrated to you, on principles of plain philosophy, the influence of the mind over the

dant secretions. Dropsy of any part may result from too abundant secretion and defective excretion. When the secretion is too scant to supply the waste of tissue we have a disease of innervation, because it is a disease when it departs from the normal or healthy equilibrium of secretion. Secretion, to preserve the best possible health, must be equal to the waste and disintegration of tissue, after the subject has received its full growth. When growth is to be attained the secretion must exceed the waste in order to produce growth. If the secretion is healthy the growth of the part will go on and not interfere with the general health of the patient. If the secretion is morbid or diseased, it will support diseased growth according to the nature of the secretion. The cells secreted may be tubercular, cancerous, piogenic, serous, &c. The diseased growth will be determined by the nature of the cell secreted. Cell life and cell death have to do with every state of health and every state of disease. The cell is the simplest form of life—the simplest and most ultimate form of death. This theory may appear infusorial; it is, however, confirmed by the most exact science and approved by the profoundest philosophy. As one who detests routinism and empiricism in the practice of medicine, I am obliged to receive what science

and philosophy demonstrate. It is disgusting to me to sit with a doctor who is bloated with self-conceit, and hear him tell of the wonderful cures he has performed and at the same time never mention the pathology of the disease, or the physiological effect of the remedy, or what active agent met the morbid condition, their minds were as dark on such subjects as night. Such doctors, in my judgment, have yet to learn the very alphabet of scientific practice, although they may drive the finest horse and buggy in the country, and common men may even boast of having seen such a doctor. A large practice does not prove qualifications, but it does prove the man knows how to play the strings of human nature. Take from such a man the *vis medicatrix natura* and the influence of mind which he can wield over the patient in consequence of the confidence the patient has in him, and you at once rob him of all his glory; the pride of wealth and the charm of beauty all vanish from the semi-frenzied quack. The anatomical dry-bone skeleton never looks more uncomely than a doctor of the description mentioned would look if deprived of the influence of the mind over the health of the body and the *vis medicatrix natura* of disease.

There is an obvious tendency in disease to

case of sickness, a trustworthy physician should be called at the earliest moment. It is impossible for me or any other doctor to write in full what is necessary to be done in every disease and the endless complication of diseases. The world would hardly contain the book. This at once calls for the strongest judgment on the part of the physician. Written rules can only guide him in routine and empiric practice. It is judgment, guided by the beautiful goddess of science, that makes him a correct, scientific practitioner of medicine, instead of being merely a symptom-treating quacknoster. In my large acquaintance with the physicians of our own State and other States, I have not met one who was not ready to say that there was more humbugging in medicine than anything else; yet, out of them all, I never heard one say that he was a humbug—it was some others that were humbugs, not he.

The humbug is like the echo: his whereabouts cannot be determined. It is like the bag of money fabled to be placed at the end of the rainbow, but can never be found. The bird always flies before the salt is placed on its tail. If humbuggery is so universal that there is more of it about medicine than anything else, as is admitted by the most of doctors, in order to make the thing so universal

every one must take some part in the play, lest the humbuggery could never become so universal as to be more about medicine than anything else. Ignorance is, as before stated, the prostitute mother of humbuggery and every other imposition under the name and disguise of medicine. Ignorance is a dark and quiet castle, which furnishes a summer and winter retreat for many doctors who even have the unmeaning letters M. D. appended to their names, which rattle-head said meant miserable dog. I may be mistaken, but my opinion is that numbers furnish more money to medical colleges than quality, for money runs the doctor-making machines, and of late years run them mighty fast, even if grinding soft corn. The lives of common people are thus jeopardized or destroyed by the soft corn ground in many of these medical mills which confer the ardently sought degree of M. D.

It is not my purpose, however, to write satire on medicine, but to honestly state facts which underlie the safety and well-being of the common people; to furnish hints which may clothe them with the ever-blooming garlands of health; to improve their minds, bodies and morals. The science of medical psychology, already demonstrated to you, if understood, will guide you safely over many of the slashes

and bog-mires of disease. That is much more desirable than to contract disease and have the remedy given for that disease. I have given you that as a guide in health to teach you to avoid disease. In case you do not avoid disease, I give remedies for all the common diseases of our country, remedies of which I have tried their virtue, and can safely recommend them to others. I have tried to study the physiological effect of remedies in relation to the pathology of disease in all the light of medical, scientific and classical learning. Thus, as the result of close study in practice, I detail to you the remedies hereafter described. As I am a young man, I take occasion to notice for the people's good, one of their common follies; it is that a man, because he has grown gray in the practice of medicine, is a beau-ideal of medical greatness, a paragon of medical excellence or the very impersonation of medical skill. We want a man of experience, they say. This is proper, if the man's experience is right, for wrong experience never improved any man in the practice of medicine, farming, trading, or anything else. I respect the gray hairs of every man, but do not respect the ignorance of any man, old or young. The question resolves itself into this: If the old way of practicing medicine is right, the new way is wrong, for it

is almost entirely changed in the last few years. If the large treasures of experience of the old doctors is wrong, what advantage can it be to themselves or anybody else? If they practice on the new system they must learn it, and that is like studying their profession over again. The old man who has been all the time a student, has kept pace with the proud march of medicine; but suppose a man has grown old and gray in the use of a scythe and cradle, what use is that experience to him if he wants to run a reaper? A boy ten years old, who has used a reaper, knows more about it than the old man full of years and experience, who never saw one. The changes in farming have not been greater than in the practice of medicine; if possible, the changes in medicine have been far greater. It is one of the most foolish ideas in the world to me that the people desire an old man of experience when science and philosophy demonstrate that experience to be wrong. While I ignore wrong experience in the old, I do not extol ignorance in the young, as you found out in the essay on the *present status of medicine in the United States*. Laziness and ignorance are warm-houses of vice. I contend for learning and science, combined with good morals and sound judgment, in the practice of our noble and time-honored profession.

I ascribe to the physician of science and skill, the highest honor ; to the routine-quaek, lasting abomination and disgrace. These views I have made up from ten years' constant study. I agree perfectly with the wise man, that much study is a wearisome thing to the flesh. I feel richly paid for the midnight oil I have consumed, the wakeful nights and sleepless days I have spent in study, ever cherishing the feeling that the noblest motive is THE PUBLIC GOOD.

SECTION II.

INTERMITTENT FEVER.

BLOOD DISEASES comprise a large proportion of the afflictions which the physician is called to treat. The class of zymotic affections is a large class of diseases ; this includes epidemic, endemic and contagious diseases. These, as the word zymotic indicates, are caused by a process of morbid fermentation in the blood, including at once all malarial and miasmatic influences, all changes of temperature, climate, &c. We have seen what a wonderful effect the mind has over the circulation of the blood, and hence we are bound to ascribe a powerful and

controlling influence over both health and disease to the state of the mind, as it may be to promote respiration, circulation, digestion, secretion, excretion, &c., to a great extent, all the vital functions of the body; contrariwise, it may even stop these vital actions and cause death. The formation of blood in the first place or the performance of its healthy functions in the second place depends greatly on the state of the presiding soul as the rules in silent but majestic power. In commencing to treat of this large class of blood diseases, the different kinds of fever claim our first notice. We commence our practice of medicine by examining first intermittent fever as it is so common in our country. In a work of this kind nothing more than an epitome of each disease can be given; even that may prove of inestimable benefit.

Intermittent or paludal fever, from *palus*, a marsh, a disease which ceases entirely at certain intervals. Intermittent, from *inter*, between, and *mittens*, sending. The idea is that the disease ceases for a time and is then sent again. This is the case in the paroxysms of intermittent fever or fever and ague. Intermittent is more nearly allied to remittent fever than any other form of fever. Remittent fever abates periodically in severity but never ceases entire-

ly like intermittent. This is the true statement of the difference between intermittent and remittent fevers. Symptoms: There is often a set of premonitory symptoms lasting from two to ten days before the characteristic paroxysms develop themselves in the form of chills and fever. These premonitory symptoms are general lassitude, stretching, a sense of weakness throughout the entire members, aching in the back and extremities, urine albuminous, feces dark, bowels disposed to constipation, liver torpid, appetite irregular and capricious, mental depression, &c. The disease is marked by three distinct stages. First, the cold; second, the hot; third, the sweating stage.

1. The cold stage. We have chilly sensations traversing the course of the sensitive nerve fibres, causing the shivering in the paroxysm of the chill, the hands and feet cold, chilly sensation running down the back, headache, dark blue tint of the nails, ideas pass with increased rapidity through the mind, the attention difficult to divert and fix on a new object, respiration is laborious but hurried, pulse firm and frequent, the eye still, cheek pale, drowsiness and coma common in debilitated persons. The cold state or chills usually lasts from one-half to four hours.

Hot stage. The temperature of the body

now rises from its natural temperature, ninety degrees Fahrenheit, to one hundred and five, from that to one hundred and ten degrees, the cheek is flushed, mouth dry, intense thirst, pulse strong, urine scanty and light colored, the color is due to the presence of albumen, pain in the head, sometimes delirium just before the sweating stage. The hot stage lasts from three to twelve hours. There is no precise limit of time to be fixed for its duration, as it varies with every degree of intensity. After the hot stage, the patient passes into the sweating stage. There is nothing that marks the transit of the patient from one stage to the other. There is no symptom which forms the partition. They pass from one stage to the other without our being able to see the precise moment one ceases, and the other commences.

3. Sweating stage. In this stage the patient gets relief from the intense headache and febril symptoms, and often falls into a quiet sleep. The sweat is first seen on the face, then on the chest, and then it becomes general over the entire body. The three principal varieties of this disease are, first, quotidian. In this variety the intermission of the disease occurs every twenty-four hours. The intermission is short and the paroxysm long—the paroxysm occurring in the morning generally.

2. THE TERTIAN. The paroxysm commences about noon generally, and returns every forty-eight hours. The paroxysm, including time of chill and fever, is about six hours.

THE QUARTAN. The paroxysm generally commences from 2 to 5 P. M., and lasts from five to nine hours; it returns in about seventy-two hours.

The Quotidian, Tertian and Quartan varieties are the principal ones; we have each of these taken on a double and tripple form. The time of paroxysm shortened or lengthened, intermittent fever is often complicated with pre-existing disease of the stomach, liver and spleen. Persons of lax fibre are most likely to become the subjects of this disease. Fall and Spring are the seasons in which this disease prevails most commonly. The peculiarity of type in this fever varies in different localities and in different seasons. The type of 1865 was congestive in the locality of my practice. In the treatment of one hundred and eighty-seven cases I lost none; none failed of cure. Treatment, sulphate quinia, in five grain doses for an adult; varied, according to constitution, etc.; given by injection usually in ten grain enemas; when not tolerated by the stomach, about three or four doses are generally sufficient to break up the paroxysms. I think the

liver and spleen have much to do with this disease. I have found a pill made of one grain podophylin, one grain leptandrin, two grains of calomel, to exercise the finest effect on the liver. Two or three of these pills, given twelve hours apart, is usually sufficient to correct the secretions of the liver. In cases disposed to pernicious, two of these pills may be given and worked off by castor oil, and checked up in its action by paregoric, in the dose of one table spoonful to an adult, and two to five drops to a child. I think almost any case of intermittent fever will yield to this treatment. Give quinine until quininism is produced. Give the pill as directed above, or give two at one dose if you have the paregoric to check its action when it produces the second evacuation from the bowels. If the sweating is copious and exhausting, give aromatic sulphuric acid, or elixir of vitriol, in the dose of 15 drops in water three times per day, until it is checked. This I consider the most rational treatment for intermittent fever, or, as it is often called, the shake, chills, fever and ague, etc. Many remedies will interrupt the paroxysms of intermittent fever. Common salt, in from eight to twelve drams between chills, will often stop their return. Fowler's solution of arsenic in ten to twelve drop doses three times a day, will

often produce a cure. Nitric acid, in five to eight drops every six hours, will stop their periodicity. Prussian blue, strychnine, salacin, nox vomica, etc., have anti-periodic effects. But I much prefer the first-named treatment in the overwhelming majority of cases. The symptoms vary in some respects, in almost every case. My design is to lay out the general landmarks for your guidance; nothing more can be done in a work of this kind. Before the sweating an opiate often does good, acidulous drinks during the hot stage, etc. This marks the general treatment of intermittent fever. I think if the treatment is varied to suit the case, but very few will fail to be relieved of this autumnal visitation. The doctors say

"An ague in the fall
Is money for us all,"

because they know that ague will yield to treatment, and return if not judiciously treated.

SECTION III.

TYPHOID, ENTERIC, OR PYTHOGENIC FEVER.

This fever resembles Typhus fever, as the term typhoid indicates. It is derived from *tuphos*, stupor, and *eidos*, likeness. The fever is characterized by extreme lassitude and stupor. The word typhoid sets forth the real nature of the disease, a low form of fever characterized by stupor. Typhoid fever was not known until Typhus fever had been generally known. Typhoid fever resembles Typhus fever in the stupor which accompanies it. This fact gave it its characteristic name, Typhus-like, or Typhoid fever. Symptoms: headache, diarrhœa, stupor, bleeding of the nose, or epistaxis, rose-colored spots on cheek and abdomen, loss of appetite, tongue dark coated, or soot colored, sudamina on breast, pain in the right iliac fossa, or right groin; tenderness on pressure of the part, pain in epigastrium, and sometimes flatulence subsultus tendinum; the eye bright and glassy, light painful; often symptoms of bronchitis, or pneumonia; urine scanty and high colored; respiration hurried, thirst insatiate, pulse quick and soft, and very irregular, ranging often from ninety to one hundred and sixty, or until it becomes a mere flutter; delirium partial, or total;

indisposition to move, resulting from feebleness of the will. These are the general symptoms which mark Pythogenic, Typhoid, or Enteric fever. The attacks of this disease are often very insidious.

The formative stage of the disease is often several weeks before the patient is confined to bed. By this remark, I mean the premonitory symptoms of the developed disease. I am convinced that Typhoid fever is contagious. Many are the examples which prove this fact. The period of incubation is usually from seven to fourteen days, but is sometimes sudden. I was attacked with the disease very suddenly myself, several years ago. Many thanks to Dr. Polin, of Springfield, for his kind attention to me. I was, to all appearances, in perfect health at nightfall. I sat up with a patient who died of the disease. I was taken with the disease next day myself—which ran its course in about twenty-eight days, then relapsed with same symptoms, but of greater severity, and run about the same period of time. This attack will keep before my mind the mental pain one may suffer during delirium, either partial or total. I am sure a great part of mine arose from the attempts of others to explain to me the nature of my disease. If I had known the power of mental emotion as I now know it, I

should have been relieved of half my pangs. I think it is positively injurious for doctors to sit and explain to the patient the nature of the disease. This arouses the fearful conceptions of the mind, which may have all the power of a reality. To prove the power of imagination, and the mind's power to regard what is false as if it were true, suppose a mother seated in the family room, and she is informed from a source that she cannot doubt, that her darling child is dead. This may be false; the child may be in perfect health; yet if the intelligence is from a reliable source, the mother has no shadow of doubt in her mind. The intelligence has all the power for the time that the reality would have. If she has but little strength of will, fainting, or the action of the heart may be suspended, as is true in many cases from sudden intelligence. This demonstrates perfectly the power the mind has of regarding its own conceptions as true, even if they are false. The old adage that *conceit* may kill, or *conceit* may *cure*, is by no means false. The philosophy of mind and body verify its truth in many examples. Hence the paramount importance of keeping the mind as quiet in typhoid fever as possible. Give the stimulus hope in heroic doses. The disease depresses the mind, and in this way the nerves do not

get the healthy psycical stimuli from the mind. Their disordered condition perhaps will not receive it, even if it is afforded by the mind.

Treatment. Purgatives must be used with extreme caution. Two grains of calomel, one of podophyllin and five of dover powders may be given occasionally. If paragoric is given after the first action, it may be allowed to remain five or six hours and then worked off with castor oil, but never suffer your patient to evacuate more than once without giving paragoric to check the bowels. If there is diarrhœa, give laudanum and starch water injections. Mineral acids are good. Use the best article of whisky, sponging, frequent change of clothes, warm fomentations to the bowels, either hop poultice or hot cloths. Dover powder does much good in the fomentive stage of the disease—quinine, when the pulse does not exceed one hundred. These are the general hints on the treatment. Much skill is displayed in the variation and selection of these remedies. There is a wide field for skill on the part of the physician beyond the naming of a remedy. All carpenters use about the same tools, but there is the greatest possible difference in the execution of their work; just so it is in the work of doctors in the treatment of disease.

SECTION IV.

REMITTENT AND TYPHO-MALARIAL.

The most prominent out-standing difference between intermittent and remittent, is that in intermittent the fever remits or goes off entirely between paroxysms. In remittent fever the fever only declines in severity, but does not go entirely off, as in intermittent. The treatment of the two do not essentially differ. Some authors discard the importance of regarding the difference between them at all. Typho-Malarial fever is a fever in which intermittent or remittent fever is blended with typhoid symptoms, viz: illiac heat and tenderness, diarrhœa, subsultus, etc. This is a fever resulting from a malarious origin, and running a typhoid course. In this complication of fevers the treatment should not be too largely of quinine, remembering that both deafness and blindness result sometimes from the excessive use of quinine. The other parts of the treatment are essentially the same as that of typhoid fever.

SECTION V.

YELLOW FEVER.

YELLOW FEVER is a fever resulting from a complication of causes. The characteristic feature of the disease is yellow complexion of the skin. The duration of the disease is from five to seven days. The severer form of yellow fever has a mortality of at least one out of three. Yellow fever is *par excellence* the disease of hot climates. It attacks with greater severity unclimated persons.

SYMPTOMS.—Pain in the back and loins, giddiness, the powers of life greatly depressed, spirits crushed to the earth, intense headache with distinct rigors, followed often with gentle perspiration, great thirst is present, appetite is gone; pain over the epigastrium. In from twelve to twenty-four hours after the premonitory symptoms, we have succeeding this the black vomit, and black colored stools. It must be remembered that what I write of this disease is compiled from other authors, not what I have seen or used in the treatment of this malady.

TREATMENT.—Large doses of quinine combined with sulphate of morphia, 20 grains of quinine combined with one fourth of a grain

of morphine. This is done to relieve the congestion attending the disease; brandy or whisky may be used if there is no congestion of the kidneys or liver. Beware of ammonia; small doses of chloroform may be given. Perfect quiet and rest are highly important. Sponging of feet and hands should be used; frequent change of bedding, free ventilation; disinfecting agents should be used about the chamber. If purgation is used, it should be done by enema in preference to administration *per os*.

SECTION VI.

M E A S L E S.

This is an eruptive fever, generated by contagion. Its period of incubation is from seven to fifteen days. Among the first symptoms of measles are classed general lassitude, shivering, symptoms of cold or catarrh, swelling of the eye-lids, eyes suffused or watery, intolerance of light, sneezing, dry cough, hoarseness and great heat of brain, pulse hard and frequent. The eruption usually appears about the fourth day and often later. The eruption at first resem-

bles flea bites. I presume most persons have seen this undesirable phenomena. The rash or characteristic eruption is first seen on the forehead near the margin of the hair or in the roof of the mouth. The rash begins to disappear on the seventh day from the time it first appears. The greatest apprehension from measles is the congestion of the lungs.

TREATMENT should not be active; the patient ought to be quiet in bed; the chamber should be comfortably warm. Foot-bath every evening is often beneficial; milk diet is highly valuable; rochelle salts may be given as an aperient. Diaphoretic mixtures are valuable. A drachm of the liquor acetate of ammonia, with twenty drops of paregoric given every four or six hours often relieves the cough very much. When the disease has run its course the patient should have warm clothes, nutritious diet, but that which is easily digested.

SECTION VII.

SCARLET FEVER, OR SCARLATINA, is a disease characterized by symptoms of fever, with a scarlet efflorescence of the skin and mucus membrane of the tongue, fauces and throat. The disease is highly contagious, so

much so that physicians have taken it to their own families in their clothes. The premonitory symptoms of scarlatina are much the same of ordinary fevers—cold chills, nausea, hot skin, frequent pulse and thirst. The eruption usually makes its appearance on the face, neck, and breast, in about forty-eight hours after the febrile symptoms. The eruption is most conspicuous on or about the joints. The eruption disappears about the fifth day.

TREATMENT, in the mild form of the disease, should be simple. I quote a just remark from Sydenham: "The simple form is fatal only through the officiousness of the doctor." Proper regulation of room and bedding, with dietetic treatment, is about the best treatment. In the choice and variation of these, great skill may be displayed by the scientific doctor. I have never had any trouble with what scarlatina I have been called to treat.

SECTION VIII.

CHOLERA ASPHYXIA.

This is the most terrific and fatal disease recorded in the history of human ills. It made

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its appearance first in the East Indies, and has spread nearly over the whole world. On no medical subject have I heard more various and conflicting views from doctors, than upon the subject of Cholera Asphyxia. I attended the Medical Club of Louisville, which met to consider the subject, on the 23d of April, 1866. I left the meeting with the misty subject of cholera in my mind, and it was very mysteriously mistified. No definite point was made as to the history or treatment of the disease. This led me more than ever to conclude that the disease was but imperfectly understood by the most intelligent part of our honorable profession. My views of medical science leads me to think cholera non-contagious. What I saw of the disease in 1855, leads me to believe that it probably is contagious. Alluding to an institution, which is now abolished, a negro man, then owned by my father, had a wife in Springfield, a country town, five miles distant. He visited her after the then existing custom on Saturday night, was with cholera, and returned to my father's on Monday morning with cholera. Then all my father's family, twenty-two in number, took cholera. Three cases were fatal. My grandmother had a negro woman, who came to see the first case at my father's, returned home with the disease and

died. In like manner, the disease traveled over that district. There was not a single case in the community except among the persons who were with cholera. Not every one who was with cholera took the disease, but not a single one had it who was not with it. My father, and many other persons, who witnessed the inroads of the disease in 1833, tell me that it traveled over the same district in the same way. Scientific facts seem to show the non-contagiousness of cholera, but isolated facts incline me to advise persons to keep away from cholera, unless there is some pressing necessity requiring them to go among it.

This much I feel that I can say and not go outside the limits of *blushing modesty*. Symptoms of cholera asphyxia almost always show themselves suddenly. We have the rice-water discharges without straining or griping. These discharges have a slight sickly smell. The rice-water evacuations are the most important and reliable symptom of real cholera. The vomiting appears to result more from over distension of the stomach than from nausea. After the vomiting and evacuations from the bowels, we have cramping. The muscles cramp until they are rigid and knotted from contraction.

The effect of mental emotion in this disease is very potent. Fear produces a powerful ef-

fect on the physical economy, under a variety of circumstances. The locks as black as a raven's wing, are bleached as white as snow in a single night by this powerful emotion of mind. Fright, in cholera, has much to do in advancing the ravages of this dreadful epidemic; fright increases nervous tension; it exalts the nervous energies until they reach a point at which they no longer heed the behests of the will. They then claim relaxation by a law of their nature. The over-taxed condition induced by the fright can only go to a certain point, and then relaxation comes on. The nervous tone and energy is expended; the vasa motor fibres no longer retain their tonicity and strength. They become lax and loose, giving at once greater porosity to the vascular membranes. This facilitates the transudation of the liquid or serous parts of the blood which go to make up the cholera stools. It is highly probable that the cholera poison tends to the same result, by relaxation and exhaustion of the nerve fibres. To illustrate the effect of violent emotions of mind in producing nervous debility: See a person who has been in a violent fit of anger; when the fit of anger subsides and the calm moment of reason returns. We often see the stout, athletic man tremulous and weak after this violent passion subsides. During the spell

every fibre was exalted to its utmost tension. This heavy pressure cannot continue. The powers of nature must relax and recuperate their expended energy and force. Just so relaxation must come on after the nervous energies have been over-taxed in the fright occasioned by cholera. This is the reason why fright increases so alarmingly the mortality of that disease. The vasa motor fibres relax after the will has kept them tense, until they must throw off that tension. The throwing off of this tension or relaxation of fibre by protracted fright, aggravates the cholera poison in robbing the life-current of its fluidity. The liquor sanguinis has an opportunity afforded by this means for its escape from the calibre of the vessels by transudation. This transudation takes away the thinner portion of the blood, which enables it to pass the round of circulation. In this way congestion and stagnation is produced. Whatever tends to support the powers of life, which are depressed by this lax, loose condition of fibre, along with this to prevent the transudation of the serous parts of the blood, must greatly mitigate the severity of cholera. The prophylactic or preventative sanitary regulations are all very necessary. I only wish they were more rigidly enforced. Epidemic cholera seems to bear a great similitude

to sporadic cholera, or cholera morbus. The cholera poison destroys the red corpuscles of the blood; hence it is ready for transudation when the condition of fibre will allow its transmission.

TREATMENT.—The primary object in the treatment in the first stage of the disease, should be to give tone and energy to the circulatory apparatus; brace up this lax condition of fibre, induced by the cholera poison, and in so many cases greatly aggravated by fright. A good prescription is:

R_y—Tr. Opia, ʒ ʒ.

Tr. Camphor, ʒ ʒ.

Liquor Ammonia, ʒ ʒ.

Chloric Ether, ʒ ʒ.

Brandy, ʒ ʒ.

Capsicum, ʒ ʒ.

Peppermint, ʒ ʒ.

The dose should be proportioned according to the severity of the disease. A table spoonful may be given ordinarily every ten minutes. Double the quantity may be given by enema, or injection, when the patient is unable to swallow, until the symptoms are relieved. I think the intense rubbing, and measures used to promote perspiration, injurious. Absolute rest and quietude, of mind and body, is infinitely better for the patient. One grain of

morphine may be given, and applied to the tongue on the point of a knife, if the patient cannot swallow. I have never used or seen used, chloroform, with gum camphor dissolved in it, to stop the spasms of cramping, but I think its judicious use might often be useful in relieving the severe cramps, but it should be administered with skill and care. I think Dr. Tanner's remedy is supported by the present state of medical science.

R_y—Chloride of Soda, 20 grains.

Carbonate of Soda, 30 grains.

Chlorate of Potassa, 7 grains.

This treatment evidently rests for support on a scientific base. To stimulate well with ammonia and brandy, use the morphine in connection with this, and give injections of laudanum, $\frac{1}{2}$ ℥, liq. ammonia, 1 ℥, combined with gum arabic water, will be found valuable aids in repelling the cholera attacks. Spunging with water may tend to bring on reaction. Anything which tends to relieve the depression of the vital powers, is serviceable. Free air is of the greatest importance. Pure water or ice to eat, when thirst exists. If the cramp in the stomach is severe, mustard, or dry cups, may be of service. These suggestions, I am sure, must be of great importance in the treatment of malignant cholera. I would invoke the

benificent Almighty that he withhold the visitation of this direful epidemic from our country. Quinine is the best prophylactic. This seems best adapted to prevent the attacks of cholera. It may be given in the disease if the case is lingering. It is much too slow in any violent case of cholera. These hints, with proper attention to the kidneys, remembering their great liability to congestion, in this disease, make up the best treatment which the present state of medical science warrants. Facts in regard to the peculiar influence of the mind over the renal organs, must be omitted for want of space.

SECTION IX.

CHOLERA MORBUS.

This is the sporadic variety of cholera. One person is attacked singly with sporadic cholera, while many persons are attacked at the same time with epidemic or cholera asphyxia. Frequent vomitings, purgings and cramps are the symptoms of cholera morbus. The contents of the stomach are first vomited, then a fluid tinged with bile, in excessive quantity; pulse small and frequent; great thirst; body covered with clammy perspiration.

The most common causes of this disease are unwholesome food, sudden change of weather,

sudden transitions of temperature, cold drinks when the body is heated, &c.

TREATMENT.—Opium in large doses; twenty to forty drops of laudanum, if that is the preparation used. Stimulate with aromatic spirits of ammonia, brandy, or good whisky. Give calomel or podophyllin after the violence of the first symptoms subside. Injections of laudanum and starch-water may be given in cases where the stomach is greatly nauseated. Many little points of interest must be omitted in a concise sketch of this kind. These all go to make up the skill of the physician in the treatment of this or any other disease.

SECTION X.

FLUX, OR DYSENTERY.

FLUX, OR DYSENTERY. An inflammation and ulceration of the lower part of the colon and adjacent parts of the rectum. The first symptoms are, uneasiness in the abdomen, griping and tormina; frequent stools of mucous and bloody consistency. The bladder, from diastaltic action through the mind, is irritated; hence the frequent micturitions attending the disease.

Tongue is flurred; pulse quick and feeble; skin dry and hot; abdomen tumified. The bloody discharge occurs from the rupture of the capillary vessels in the inflamed region. After the inflammation has advanced to suppuration, we have pus in the stools. Examination of the feces under the microscope, is of great importance to the skillful physician.

TREATMENT.—Warm fomentions to the bowels are always beneficial, such as hop poultices, etc. Perfect quiet in bed. Mind kept free from excitement. The bowels should be kept open by small doses of castor oil. High authorities recommend saline cathartics, such as Epsom and Rochelle salts. I greatly prefer castor oil. Opium should be freely used, according to the susceptibility of the patient to its influence. Two grain doses, repeated every three hours, is often borne with impunity. A much safer course is to begin with a smaller dose, and increase the dose if not sufficient to relieve the pain. About one-half grain of podophyllin, combined with five grains of ipecac, about every forty-eight hours, often seems to produce a happy effect, when used in connection with the opium. Mucilaginous drinks are very serviceable—gum arabic, gum acacia, slippery elm water, etc. This comprises the

general sketch of the treatment of flux or dysentery.

SECTION XI.

SMALL-POX

Is a disease, the origin of which is lost in antiquity. It is an eruptive fever, communicated by contagion, or by a specific *virus*.

SYMPTOMS.—They are very much the same of other forms of fever, viz: Languor, pain in back and extremities, frontal headache, flashes of heat, nausea, tenderness over the stomach, tongue white in the centre and red at the tip, bowels costive, urine scanty and high-colored, mind vasculating and confused. After the disease has gone on for several days the tongue becomes of a bright red color. The eruption usually commences on the third or fourth day.

TREATMENT.—It is best to be very conservative in the use of remedies. Proper attention to diet, which should be light, and easy of digestion. The temperature of the body is also important. If the surface is hot, sponging with warm water will be in order; if cold, increase the temperature. When the disease assumes a typhoid form, the treatment should be the same in general of typhoid fever. Vaccination, as first introduced on the 14th of

May, 1796, by Dr. Jenner, is the best means of preventing the dissemination of the disease.

SECTION XII.

RHEUMATISM

Is a fever invading the joints. It depends on *materies morbi* in the blood. The best tests of scientific investigation decide that the morbid agent is *lactic acid*, contained in the blood. Treatment, founded upon this base, I have found very successful. However, this, in common with many other diseases, often runs a difinitive course, and terminates favorably without medicine. There is extreme trouble in determining, with any high degree of certainty, the value of any therapeutical agent, owing to the above stated fact. Nitrate of potassa, a drachm per day, often seems to effect the happiest results. From one to two drachms of bicarbonate of soda, or the bicarbonate of potassa, in twenty-four hours, effect the same results. Rochelle salts, to keep the bowels open, is good, but there is rarely a call for its use in combination with the above named remedies. Cholcicum has never met any expectation half so well as the preparations of soda and potassa. These remedial agents should be used until the

urine is rendered alkaline and increased in quantity. Where extreme pain exists, opiates may be used to blunt nervous sensibility, and prevent the mind from taking cognizance of the impression of pain. I have used carbonate of lithia, three grains per day, combined with a drachm of bicarbonate of soda. This is very valuable where there is a trace of gout complicated with rheumatism.

SECTION XIII.

GOUT.

This affection results from a herculean taste, cultivated in the epicurean school. Fine wines and fine dinners, registering their effect on the powers of life, produce the disease familiarly called gout.

SYMPTOMS.—Interrupted digestion, pain in left side of the chest, heart-burn and flatulence, disturbed action of the heart, sometimes fluttering; exquisite pain in the great toe, palm of the hand, etc.; fever, restlessness, drowsiness, bowels constipated, urine scanty, frequent desire to micturate, sometimes accompanies the disease.

TREATMENT.—Cholcicum in small doses, bi-

carbonate of potash, in one to two drachmas per day. Tincture of hyoseyamus may be given to relieve pain. Opium should be withheld, unless there is a pressing necessity for it, because it diminishes the secretions. This is the general therapeutical sketch of the treatment of gout.

SECTION XIV.

COLIC

Is characterized by twisting pains in the belly, especially about the navel. Ordinary colic is not accompanied by any set of inflammatory symptoms. Indigestion is the prime source of colic. This indigestion may result from various causes, such as depraved secretion, etc. It may result from a diminution of bile, or an excess of bile, a want of gastric juice, pancreatic juice, or any of the intestinal juices. This pain in the belly may be relieved by pressure; it may also be relieved by large doses of aromatic spirits of ammonia. If the symptoms are very violent, and demand immediate relief, chloroform or ether may be given. The presence of undigested food in the intestine, along with the morbid secretions, generate the gases, which distend the abdominal viscera. This constitutes the phenomena of flatulence, the

most prolific source of colic. If the violent symptoms are relieved in the manner described, a full dose of Rochelle salts may be given; after which a dose of podophyllin, or calomel, should be given, if the secretions of the liver are defective. Hot fomentation deserves notice during the violence of the pain. A flannel cloth, wet in spirits of turpentine, forming a stupe, is often serviceable. Large doses of ammonia I have found as efficient in giving relief, as any other article. This needs to be followed up by other appropriate treatment, however.

SECTION XV.

DIPHTHERIA

Is a constitutional disease, attended by a local exudation on the tonsils and adjacent parts. This is a blood disease; often it assumes an epidemic form. The disease is asthenic beyond all question of doubt, and calls loudly for supportative treatment. The barbarous *burning*, or *cauterising* the throat, has caused much suffering, and even death. Unprincipled quacks have resorted to the burning treatment in every form of sore-throat, calling it diphtheria, for the sake of the almighty dollar. In this way they can make two visits a day for two or three

weeks, and torture and torment the miserable sufferer before the time. This practice has perished with its using, and medical science now exposes such detestable mercenaries to the odium of the world. The constitutional treatment should consist of tonics, perchloride of iron. Muriated tincture of iron answers a good purpose. Local application, a gargle of common salt, is very valuable. Chlorate of potassa is also good, used in the same way. Tannin and glycerine are good. Iodide of potassa acts beneficially on the renal organs, and seems to aid in eliminating its particular poison from the system. When there is extreme trouble in swallowing, injection must be used. The appropriate remedies may be administered in this way—beef tea, beef essence, brandy, etc. This comprises a bird's-eye glance at the treatment of this disease.

SECTION XVI.

THRUSH, OR APTHÆ.

This is the special affection of infancy. It consists of small, round white pimples over the tongue and adjacent membrane of the mouth.

This usually disappears under the use of acetate of lead, or borax and glycerine. Sulphate of soda, or even chlorinated soda, is often efficacious in removing the affection. One drachm of sulphate of soda to one fluid ounce of water, will often effect a cure in a very short time.

SECTION XVII.

CROUP.

The most characteristic symptom of croup is the crowing respiration. We have, in the first stage of croup, the symptoms of cold; we have slight fever, cough, eyes suffused and glassy, running at the nose, etc. The respiratory crowing sound once heard is never hard to recognize again. Warm fomentations to the throat are valuable in the first stage of the disease. Iodide of potassa, in large doses, is good. If the false membrane has formed, emetics should be promptly resorted to. The air of the sick-room should be warm and moist. If the heat of the body is very great, sponging may be used, or the warm bath may be very serviceable. Flannel should be worn next to the

skin. In convalescence the diet should be nutritious, and stimulants may be given in moderation.

SECTION XVIII.

CATARRH, OR BAD COLD.

The term cold is used to denote an irritation of some part of the mucus membrane of the air passages. I suppose the term bad cold is a contrivance to express a greater degree of inflammation. This, however, is a matter of no importance, as regards the popular name.

SYMPTOMS.—Soreness, lassitude, pain in limbs and back, hoarseness, sore throat, furred tongue, quick pulse, thirst, loss of appetite, frontal headache, cough, etc.

TREATMENT.—Every man is his own doctor in this affection. Usually he amuses himself with feet-washing, teas, etc. Cold will usually disappear in three or four days. If the subject is healthy, five grains of dover powder, one grain of podophyllin, and two grains calomel, may be taken. A dose of Rochelle salts. Ten grains of dover powder alone, taken at bed time, often acts beneficially. A good drink of wine or brandy, after a hearty dinner, often

serves as the valedictorian of a cold. This is about all that space will permit being said of a simple cold, or catarrh. If deep cold is complicated with any other disease, it then becomes an object of more important notice. Cold in a person predisposed to consumption, is more serious than ordinary. Cold is contracted by changing the body from extremes of heat to extremes of cold. The sudden transition of temperature of the body is what generates catarrh. When the body is parting with its heat, after it has been heated, then it is most liable to contract a cold. To use a common expression, when persons cool off suddenly they are most apt to take cold. When the body is being heated it can resist a considerable degree of cold. When it is parting with its heat, or cooling off, it is not at all prepared to resist the same degree of cold. Fatigue also aggravates the effects of cold.

SECTION XIX.

HOOPING-COUGH

Is a self-limited, nervous affection. It commences with the ordinary symptoms of cold. It is attended with fever, and often vomiting. Some poison of the atmosphere causes a spasmodic irritation of the pneumogastric nerve.

After the expiration of the air from the lungs, the external air, by an inspiratory rush, enters the lung, causing the hoop. It lasts from two weeks to two months; usually, from two to three weeks. The object of treatment is not to cure or cut short the disease, for it runs its course, being self-limited. The object of treatment is to ameliorate and conduct to a favorable termination. The patient should be warmly clad, and not allowed to go out in the open air. Diet should be nutritious, and easy of digestion. Chloroform and glycerine, equal parts, rubbed on the spine, is of great benefit. When hooping-cough is complicated with bronchitis, expectorants should be used, such as tincture of squills, paregoric, aromatic spirits of ammonia, etc. Along with these, ipecac should be used.

SECTION XX.

ASTHMA.

Symptoms of asthma are usually headache, sleeping; some trouble about the digestive apparatus. The latter, I apprehend, is the most prolific cause of the attacks of the disease.

The disease pertains to middle and advanced life principally. No human ill has ever called forth such sympathy from my own breast, as that now under consideration. To see a patient gasping for breath in intense pain, must wake up all the latent sympathies of the physician.

TREATMENT.—No fixed rules of treatment can be adopted. In some patients I have found one thing efficacious, while in others it seemed perfectly inert. Large doses of sulphate of zinc as an emetic, often acts as a charm. In other cases, ammonia stimulates the air passages. Chloroform and ether often control the nervous trouble, producing the contraction of the circular muscular fibres of the bronchial tubes. This contraction of fibre seems at times to defy the entrance or exit of air into or out of the lungs. The remedial agents named are of importance during the asthmatic spell. The attention during the intervals should be directed to the constitutional treatment. Tonics are important. Good nutritious, easily digested food, is to be recommended; change of scenery; relaxation of mind. The mind has a very powerful controlling influence over any nervous disease, and diseases which are not directly under the control of the motor fibres. The mind may have a very powerful influence over them through the

secretions. The mind of an asthmatic should be kept serene and clear. It needs no demonstration to prove that mental effort is followed by exhaustion; hence the asthenia induced by overtaxed mental conditions. Cold shower bath or sponging is good between attacks. A glass of whisky will prevent an attack sometimes. A cup of coffee, made very strong, will often have the same effect.

SECTION XXI.

DYSPEPSIA

Is a difficult or painful separation of the nutritious from the non-nutritious parts of the food. This separation is commenced in the stomach, and completed in other parts of the intestines. Anything which interferes with the healthy action of the stomach, may be an exciting cause of this common malady. Very many are the causes of dyspepsia; taking food in excessive quantity, or of bad quality. Dr. Beaumont proves by experiment that spirituous liquors are a prolific source of injury to digestion; imperfect mastication, from bad teeth; taking meals in such quick succession that the stomach has no time to rest; want of exercise; excessive labor, psycical or physical; mental

emotions powerful in kind ; excessive smoking, snuffing, and this fastidious style of lady-like dipping. Many morbid conditions of other parts, acting through the mind, produce this functional disorder. When the mind is overwhelmed with sorrow, feverish with anxiety, or sickened with disappointment, the stomach is quick to feel its shock, and sensitive to its mighty power.

SYMPTOMS.—Capricious appetite, sometimes taking more food than the stomach can digest ; at others, too little to answer the purposes of nature ; costiveness, alternating with diarrhœa ; flurred tongue ; foul breath ; a sense of pain, weight and fullness in the stomach ; dull headache, *heart-burn*, *water-brash*, acid belching, flatulence, or an inordinate collection of gas in the intestines. Sometimes the stomach is so distended by gas, that the descent of the diaphragm is resisted, occasioning an oppression of breathing. *Dyspepsia unmans a man*. The power of the depressed mind sinks powers of life that much deeper into the bog of confusion and embarrassment. Along with this distressing psycical depression, we often have palpitation of the heart, dimness of vision, &c.

TREATMENT.—Proper regulation of diet is often an efficient and speedy cure for dyspepsia. In cases where the first symptoms of dys-

pepsia show themselves, great care should be taken in the selection of food. A mild and vegetable diet, principally, should be chosen; soups of various kinds, not too highly seasoned; meat of squirrel, hare, partridge, chicken, &c., in moderate quantity. I have noticed that a full dose of podophyllin, or one grain of podophyllin and one of leptandrin improves digestion very much for several days. Pepsin, three grains taken at meal time, is of great importance. Bicarbonate of soda or potassa is good when there is an undue amount of acid in the stomach. A little wine or brandy, or a little old Bourbon, if it is right handy, may be taken after meals, if the object is to stimulate the stomach to increased action. If it is to increase the appetite for food, it should be taken before. Lime-water, a table spoonful in a glass of milk, three times a day, often produces a fine effect on stomach digestion. Take of lime one-twentieth the bulk of the water added, and let it stand twelve hours, and pour the water off and use it as described above. The mind exercises a powerful influence over this disease.

Authors on medicine often speak of the moral effect of remedies. This is not very chaste in style. The psycical effect of remedies is much more chaste and expressive. Moral has reference more to the moral faculty, or con-

science; psycical to the intellect, or the mind as a whole, which suits the purpose of medical writers much better. The psycical effect on dyspepsia is very powerful. Change of scenery, watering places, cheerful company, and relaxation from care, all tend to happy results for the dyspeptic. Horse-back exercise, free air, moderate exercise, and even moderate labor may conduce to health, where the dyspeptic gradually inures himself to it.

SECTION XXII.

CONSUMPTION.

SYMPTOMS.—Gradual decline in health, loss of flesh, dry, hacking cough, dull pain under the shoulder blade or scapula, hemorrhage from the lungs, symptoms of dyspepsia, sweating, diarrhœa, often weakness of voice or hoarseness. The cough does not occasion much pain because the lung substance is not highly sensitive, indeed it has a very low degree of sensibility.

TREATMENT.—Diet and regimen with proper attention to mental assistance does infinitely more than the apothecary's drugs. Diet should be nutritious and easily digested. Milk,

boiled eggs, soups, etc., in connection with good whisky and cod-liver oil, and plenty of outdoor exercise. The air was made for the lungs and the lungs for the air. Clothing comfortable, flannel next the skin. Sponging does good often, and the feet should be kept dry and warm. Here it is agreed by the best medical men of the world that the mind has a most potent influence either for weal or woe. The best established cures of consumption have been in persons who knew how to bear up against the mental depression consequent upon the disease. They have either been medical men or those who knew well the nature of the disease and could brace themselves against the depression attending it. Consumptives never ought to sleep in a close room; give them the free breath of nature. There are many things which I would love to write that I must forego for want of space in a work of this kind.

SECTION XXIII.

MUMPS, OR PAROTIDITIS.

All that is necessary is milk, soup and light, digestible articles of food. A cloth wet in warm water and applied to the neck, with a dose of Rochelle salts to open the bowels, etc.

SECTION XXIV.

BRONCHITIS.

BRONCHITIS is an inflammation of the lining membrane of the bronchial tubes. The great danger attending this disease is its liability to spread or extend to the lung-substance. This is the most common lung disease.

SYMPTOMS—Fever, hurried respiration, foul tongue, headache, anxiety of mind, depression of spirits, pulse regular and feeble, ranging from 120 to 150 generally; a sense of tightness about the chest, cough, &c.

TREATMENT—Perfect rest and confinement to bed. It is desirable to have the air of the sick-room moist; diet nutritious. If there is much

depression, stimulants are indicated. If there is a large accumulation of phlegm in the tubes, an emetic may be of service. Saline cathartics may be used, but my course generally is to give a cathartic composed of one grain of podophyllin and same of leptendrin. Great care should be used in the administration of opium. A turpentine stupe may be used to the chest. Ammonia, paregoric and squills form a good mixture for bronchial difficulty.

SECTION XXV.

PNEUMONIA.

PNEUMONIA is a disease characterized by an inflammation of the lung-substance, or parenchyma of the lung. This inflammation may exist in one or both of the lungs. When both lungs are affected, it is technically called double pneumonia. When pleurisy is complicated with pneumonia, we term it pleuro-pneumonia.

SYMPTOMS—They differ very much in their minutia; however, their general aspect is similar. We often have pneumonia ushered in by chills, or at least distinct rigor, followed by fever, or often the fever precedes the cold sensa-

tions; quick pulse, often as high as 140 to 160 beats per minute; intense heat of skin; thirst insatiate; loss of appetite; general weakness; mental depression; headache, and not unfrequently transient delirium; shortness of breath, with cough resembling bronchitis; pain in some part of the chest; dullness on percussion of the part, &c.

TREATMENT—Pneumonia being a self-limited disease, it naturally runs a definitive course. The object of treatment is mainly to support the powers of life until the disease has run its course. Hence tonics and alcoholic stimulants are of the highest advantage.

When there is much pain and restlessness, opium acts most happily. If the patient is very fleshy or plethoric, full-doses of salts should be given. Rochelle salts are preferable. If the patient is weak, we must support the powers of life by quinine, whisky, and a nutritious diet, such as soups, milk, beef essence, &c. Warm stupes applied to the effected parts do good. Heat and moisture aid in the formation of the cells which remove the disease. Vapor inhalations are often serviceable. These are the general hints on the treatment of pneumonia.

SECTION XXVI.

PLEURISY.

PLEURISY—An inflammation of the serous membrane forming the sac which contains the lung or lungs, and lining the thoracic cavity.

SYMPTOMS—Usually ushered in with chilliness or rigors, followed by fever; a sharp lancinating pain in the side, familiarly called a stitch. This pain is usually seated below the nipple. It is painful to lay on the affected side, to cough, or even to breathe; hot skin; pulse quick; the number of breaths increased; a friction sound is heard on application of the ear to the affected part.

TREATMENT—Confinement in bed; avoid deep inspirations, much talking, &c. Nitrate of potassa 20 grains, liquor acetate ammonia half drachm, water two ounces, given every six hours. Poultice of linseed, or poppy-head fomentations applied to the part. The bowels should be kept open by salts, given as the necessity of the case may demand. Belladonna and tincture of opium rubbed on the affected part. Opium to relieve pain. These are about the general hints on measures of treatment.

SECTION XXVII.

SPOTTED FEVER.

SPOTTED FEVER.—This is a heavy form of typhus fever, (typhus gravior.) The peculiar characteristic of this form of fever is the mulberry rash, occurring usually from the fifth to the seventh day. This rash remains until the ultimation of the disease. The number and size of these spots depend upon the intensity of the disease. The disease results from impure air and bad food. Crowded halls furnish the most prolific source of spotted fever.

SYMPTOMS—Dryness and heat of the skin. Stupor is pre-eminent. This is why Hippocrates, more than 2000 years ago, called it typhus or stupor fever, or a lethargic fever in which the patient is suddenly deprived of his senses, as if thunder struck. Sense-perception is greatly blunted. Taste and smell in particular are impaired. We have thirst, a grave, dejected countenance; bowels costive; pulse tense and rapid; dry tongue; extreme prostration; general soreness, irritability, &c. These make up the very general symptoms of spotted fever. Many other symptoms of fever in general accompany spotted fever.

TREATMENT—If the patient is early seen, an emetic may do good. An ounce of the wine

of ipecac, with warm water, forms the most appropriate emetic. In connection with this, a purgative of calomel and podophyllin should be given to thoroughly evacuate the bowels. Aromatic sulphuric acid, given in doses from 20 to 30 drops, may be given, diluted in water, every three hours. Sponging with tepid water, three times per day, often does good when there is a high degree of irritability. Symptoms which threaten *ataxia*, or nervous disorder, so common in every form of fever, should have a liberal share of attention. This *ataxic* or disordered nervous condition tends directly to exhaustion. Here, again, *medical psychology* is wonderfully important. Says Dr. Bennett, of Edinborough, Scotland: "The beneficial influence of hope and confidence over disease is as well known to medical men as the injurious tendency of fear and despondency." After what has before been said of the influence of the mind over the body and conversely the body over the mind, it is thought needless here to elaborate. The mind acting upon the sensitive, the motor, excitomotor, vasa-motor, and other nerve fibres, may tend largely to produce *ataxia*. The nervous disorder termed *ataxia*, produces depression of the powers of life. This assists amazingly the ravages of many diseases. It reinforces largely the depression of spotted fever.

Having digressed from the plan of treatment, we return. Ice ought to be allowed freely. The hair should be removed. If there is a high degree of cerebral excitement, cold sponging may be cautiously used to the scalp or the ice-cap. Quinine certainly acts very beneficially over this disease. The bladder should be daily examined, and the catheter used if the urine is retained. If there is restlessness and irritability, opium in half grain doses should be used to procure rest. The dose may be repeated every two hours, until the desired effect is produced. It is desirable to distinguish between oppression and depression. Depression results from weakness. Oppression may result from some embarrassing cause operating only temporarily. If depression exists, alcoholic stimulants are indicated; wine, brandy or good whisky should be used at the convenience or discretion of the practitioner. The sketch of treatment just given, must only be considered the general hints on the treatment of spotted fever.

SECTION XXVIII.

HYSTERIA

HYSTERIA is a spasmodic nervous affection, producing convulsive and semi-voluntary muscular contraction. This affection obeys no law

of periodicity. It mimics every disease in some particular, and differs in others. It is a nervous disorder, presenting different and ever-varying varieties. There is no disease which shows more certainly the power of the mind over the corporeal functions. This is a disease peculiar to females. Attacks are rarely met with in males. This disease always involves some aberration of mind, in combination with disordered nervous function. We take occasion here again to refer to the three grand divisions of psychology; viz: sensation or feeling; second, reason or intellect; third, the will. In hysteria, every department of psychology is morbidly biased or perverted. We often find the mind of the patient occupied with the grossest exaggeration of the symptoms. Physicians soon learn to be exceedingly on the *reserve* in calling the disease hysteria. This name is odious to the self-deceived and self-tormentor. It requires but little tact, however, on the part of the physician, to enable him to recognise a case of hysteria after once seeing a well marked case. In this disease the sensation or feeling presents to the mind the most distorted and exaggerated emotions. The subject, for want of strength of will, is unable to refrain from their adoption. Hence, as we have shown, action follows thought as a sequence. Facts shown

in chapter on Thought and Action, Mind Affected by Different States of the Nervous System, and conversely, the Human Will, all are exemplified in hysteria. Want of space prevents their diffuse notice now.

SYMPTOMS—Convulsive and semi-involuntary movements of the trunk and limbs; beating the breasts with clenched hands; tearing of the hair or garments; screams; violent agitation; *globus hystericus*, or a supposed ball in the throat, causing a sense of suffocation. Successive outbreaks of crying or laughter, hiccough, &c. The patient will often sink down from exhaustion, and remain for a time, and rise up tired and crying. The hysteric may not be able to control the disease when the paroxysm comes on, but can do much to prevent, or entirely prevent the paroxysm. The feigned pains of the hysteric are always increased by pressure. These self-tormentors answer questions in a very morose manner. Often they feign such dreadful oppression, that they can only answer questions in monosyllables.

Sir Henry Holland says that "Hypochondriacs, by fixing their consciousness with morbid intentness on different organs, not merely create disordered sensations in them, but even disordered actions. There may be palpitation of the heart, choked respiration, flatulence, and

other diseases of the stomach," &c. This at once opens a wide field for medical psychology. Hysteria, chorea, catalepsy, and a large number of kindred affections present a wide, useful and beautiful field for medical psychology. Trances and ecstasies result from occult powers of mind being developed by nervous disorder. Here is a field for the keen-eyed psychologist and the far-seeing physiologist.

TREATMENT—Free air, healthy exercise at some cheerful employment; nutritious diet; plenty of milk; avoid mental excitement; strengthen both mind and body. Get the confidence of the patient as perfectly as possible. The cold bath is valuable. Muriated tincture of iron as a tonic, is good.

It seems to me that I have witnessed a number of cases of chorea and hysteria in schools where some of the parties took it by imitation, for there is no limiting the power of the immortal mind. The words of Fallstaff beautifully express my idea. He says: "That either wise bearing or ignorant carriage is caught as men take diseases, one of another; therefore, let men take heed of their company." It can not be said that hysterics are *malingersers*, yet it must be true that they are in a high degree self-tormentors. The bowels should be kept open by calomel and podophyllin. During the

paroxysm tincture of valerian, tincture hyoscyamus, asafoetida, belladonna and opium, all are often useful.

SECTION XXIX.

WORMS.

SYMPTOMS.—Swelling of the abdomen, pains resembling cholic, foul breath, picking at the nose, grinding of the teeth at night, capricious appetite, passing of worms or joints of worms. Worms ought to be expelled, for they may bring on fever and convulsions, and in this way make their impress on the mind. In addition to this, they often multiply with astonishing rapidity.

TREATMENT.—Santonian, two to five grains, calomel same, given at night and the patient eat no supper. Sugar may be added and mixed with cream. A dose of salts or oil should be given in the morning. This is usually all that is necessary in ordinary worms. This repeated a few times will be sufficient usually.

SECTION XXX.

HEADACHE

Is a very general affection, arising from a great variety of causes and consequently calling for different courses of treatment. It is preeminently a nervous affection, because the contents of the cranium are only an aggregate

collection of nerve fibres. It may arise from nervous asthenia or want of nervous force, then use stimulants, as a tea spoonful of aromatic spirits of ammonia, a toddy, a cup of coffee, etc. If it results from billious, calomel or podophyllin may be taken with advantage. When it arises from over-taxed conditions, rest and relaxation is the best remedy, and so on for all the varieties of headache.

SECTION XXXI.

TOOTHACHE

Is very closely allied to neuralgia, neuralgia being an aching of the nerves of any part. Toothache is an aching of the nerve of the tooth only. Toothache results from the sensitive nerve fibres being exposed to the action of the air through the hollow of the tooth. Any article which blunts or destroys sensation in the nerve gives relief, such as chloroform, laudanum, oil of cloves, nitric acid, creasote, etc.

SECTION XXXII.

NEURALGIA

Is an aching of a nerve. If it is in the nerves of the face it is called facial neuralgia or tic douloureux. If neuralgia results from

malarial causes, quinine is good; if from enemia, tonics and nutritious diet; if neuralgia results from decaying teeth, the teeth should be extracted. Chloroform rubbed on the part is the most satisfactory article to give temporary relief. Warm appliances are often palliative. We now close our sketch of practice, hoping the suggestions made may be valuable to those who read this book.

SECTION XXXIII.

BEST MODES OF PRESERVING HEALTH.

It is certainly true that ignorance of the laws of health contribute largely to bring on disease. As we know and obey the laws of health, we measurably escape the sore pangs of disease. I do not presume to say that we can so live as to avoid disease altogether. Disease is a physical punishment attending a moral offense. By sin, disease as well as death entered the world. It needs no argument to prove that a knowledge of the laws of health tend in the highest degree to the preservation of the same. See how much disease and misery unenlightened and un-

christianized nations endure more than the civilized parts of the world. No course of conduct conduces more to health, usefulness and happiness than the following rules, if kept inviolate :

FIRST—*Observe systematic rules of life.* Irregular habits of life are indulged at the expense of both mind and body. Like the jaritory motion of machinery, it overstrains, weakens, or destroys some vital force. It is sure to loosen a screw in some part of the complex machinery composing the human body, fearful and wonderful as it is in its making.

There are several things in which it is necessary to be systematic. It is necessary to be systematic *in sleeping*. Sleep is a nervous rest, as before defined. During the waking hours we have the wear and tear of the system going on. The vital force and energy is expended. The clock-work of the system runs down, and sleep is nature's own way of winding it up. All activity, whether psycical or physical, is accompanied by exhaustion or expenditure of nervous force. The process of nutrition goes on with a much higher degree of perfection in sleep. Therefore the powers of life are invigorated and recuperated by sleep. Sleep or a certain amount of nervous rest must be had, or the waste of the system will be greater than

the supplies furnished. In childhood and youth the growth is greater than the waste; hence a greater part of the time ought to be spent in sleep. Eight hours sleep is necessary for the healthy adult, or one-third of the time. Old persons require more sleep, because the process of nutrition is much slower. It is necessary to have a certain amount of sleep, and to have it at certain times.

It is necessary to be systematic *in eating*. As the system is constantly undergoing waste, it is constantly calling for a repair of this waste. Taking of food is the manner of obtaining material to supply this waste. This waste is going on all the time; therefore the necessity of taking food at systematic intervals.

It is necessary to be systematic *in exercise*. Every power of mind or body is strengthened by exercise. The subject of but little strength, after practising gymnastic exercises, becomes athletic, agile and powerful. Who has not seen the wonderful increase of muscle in the blacksmith's arm? This is the result of exercise. The exercise is much better taken at regular times and in moderate amount. Persons of studential or sedentary habits, need to take exercise. Those who perform manual labor in the daily avocations of life, do not need to take periodical exercise—their labor gives them that.

Labor, however, should be performed at systematic intervals.

It is necessary to be systematic *in study*. Nothing tends in a higher degree to obviate the debility so frequent on studential habits than systematic habits in study. There is a wonderful control of mind which one may gain in time over his mental operations by discipline and training. In every effort to strengthen the powers of the mind we should remember if we do it at the loss of health we are losers. Both the powers of the mind and the powers of the body can be trained and increased. I don't care how great the natural aptitude of the horse or how fine his blood may be, or how symmetrical his form may be, he needs to be trained before he is ready to compete successfully on the race course. Neither is a man ready to enter the race of public life without study and training. The way in which to make this study useful and at the same time preserve the powers of body is to study systematically. When the mind is wearied and mental energy expended, give it rest; take bodily exercise and do it regularly. It ought to be a fixed point to strengthen the body in study just as much so as the mind. We know that bodily exercise strengthens the body and also that mental exercise strengthens the mind. Along with

this, we know that their influence over each other is reciprocal. One cannot be greatly weakened except at the expense of the other. A vigorous mind in a healthy body is the perfect style of man when that mind and body are restrained by moral sense. We often see the person of studential habits given to melancholy; this is a perverted use of knowledge, or rather its abuse. Knowledge and learning should be used to make us contented and happy instead of giving us to every kind of distaste, repining and even melancholy. To avoid this morbid perversion of knowledge, be systematic in study and take bodily exercise in some cheerful employment. I think persons make shipwreck of bodily health in study, because they violate some of the suggestions already made. The writer has been a systematic daily student for ten years and now enjoys better health than he has ever done at any other period of his life. He never could stand study more than a week or two at a time until systematic rules of study were adopted. Single cases, however, do not fix general rules. He who adopts systematic rules of life will reap the richest reward. If persons will adhere to systematic rules of life and wear clothes suited to our variable climate, and give proper attention to the condition of the bowels, they may pass safely

by many of the afflictions which lie in ambush at every step in the checkered scene and pathway of eventful life.

CONCLUSION.

WE are now about leaving a subject rich with importance to every human being. We have been considering the subject of MEDICAL PSYCHOLOGY —a subject new, original and useful. We are now led to the practical issue — the *qui bono*, or what good is the result? The answer must be obvious to every intelligent man whether medical or not. A subject which underlies the health, happiness and usefulness of every human being as does medical psychology, the very echo of intelligence answers, *great good must result from its study and use*. Some loose, casual thinkers may say, suppose the mind has the power over the body you say it has as you have clearly shown, what application can you make of it? I answer, the most useful and most beautiful. We have under the head of psychological out-croppings, traced the effect of modesty in the mind, or fear in the mind and how they produced the phenomena of blushing or turning pale on the face. These emo-

tions of the mind are the exciting causes of this phenomena in the body. Of course, on broad principles of philosophy, if you remove the cause the trouble ceases, or in other words, there is no effect without an adequate cause. We know well enough how to produce the exciting cause of these phenomena; we know how to excite modesty in the mind susceptible to its influence; we know how to excite fear in the mind which depresses the powers of life; we know how to excite hope in the mind which acts as a stimulant to the powers of life. Then away with this nonsense that psychology is impractical and mysterious beyond comprehension. The effect of psychological influence is not a particle more mysterious than the physiological effect of many of the remedies we use in every-day practice. If it is wise to strain at a gnat to swallow a camel, then it is wise to object to medical psychology and receive ten thousand other facts just as mysterious and as ill understood. I have been delighted during several years past to see how fast the learned of the medical profession are approving the importance of mental influence. Dr. Flint, in his practice of this year, speaking of the treatment of dyspepsia, says the treatment may be arranged in three divisions, viz: First, those relating to diet and regimen; sec-

ond, measures addressed to the mind, and third, medicinal remedies. This shows that America's brightest author appreciates highly mental influence, which is most properly called medical psychology. Dr. Bennett, of Edinburgh, Scotland, the medical philosopher of the world, page 299, says: "The effect of mind on the body has from the earliest period been seized upon by individuals as a ground for veneration or astonishment." Dr. Tanner, of London, also frequently alludes to the influence of the mind. The master medical spirits of the world recognize medical psychology and its bearing on health and happiness. It will stand firm as old ocean's rock, and each successive wave of medical science will only add an additional polish and lustre. Medical psychology will outlive time itself. This subject is replete with beauty and importance. The author has tried to evolve as much as space and his capacity would admit. Instead of three hundred pages he might have made three times three hundred if it had been the style of the work contemplated. Now, reader, in the hope that the pages written may be of benefit to you as the study of them has been to the author, we come *to the last, the saddest word,*

FAREWELL.





