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PÆDOHYGEA:

THE

FEEDING AND MANAGEMENT

OF

INFANTS AND CHILDREN,

AND THE

Homœopathic Treatment of their Common Diseases.

BY

T. C. DUNCAN, M. D., PH. D.,

AUTHOR OF
"HOW TO BE PLUMP."
"HOW TO FEED CHILDREN TO PREVENT SICKNESS."
"A PROFESSIONAL TREATISE ON THE DISEASES OF INFANTS AND CHILDREN AND THEIR MEDICAL TREATMENT."
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CHICAGO PÆDOLOGICAL SOCIETY.
FIRST PRESIDENT OF THE
AMERICAN PÆDOLOGICAL SOCIETY, ETC., ETC.

"*One-third of all diseases belong to the age of Infancy.*"—HUFELAND.

"*Errors in feeding rank first among the many causes of infantile mortality.*"—RUDDOCK.

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To

MY MOTHER

WHOSE EARNEST, HOPEFUL YEARNINGS, WATCHFUL CARE, LOVING TRAINING AND NOBLE PHILANTHROPIC INSPIRATION MOULDED AND FASHIONED MY WHOLE LIFE,

THIS VOLUME

IS HUMBLY INSCRIBED.

PREFATORY.

The former editions of this work having been taken up — scattered into thousands of homes to assist mothers in the work of rearing healthy children — another edition is now issued.

This work is a collection of facts relating to the study, feeding and management of infants and children, and the home treatment of their more common diseases, woven together by the author, as replies to the many questions that occur to mothers in the care of their little ones.

The first part of the work attempts to show the mother that she is an artist of the highest order, and that she may mold her child to adorn any niche; how she may have a healthy happy infant, and how it may reach the highest development. The hints here given are collected from a great variety of sources, and are presented in a plain manner, rendering them available and practical to every mother.

The different parts of the body are then taken up separately, and their various functions and disorders treated in such a way as will, it is hoped, be clear and intelligible to every one. The author believes that many diseases are entirely avoidable, and special pains is taken to point out the causes over which parents have absolute control. Notwithstanding, children will get sick.

As many of children's ailments are ushered in suddenly, the author has not forgotten that many mothers

are miles away from help, therefore the means of relief advised in these pages are those usually at hand, or within easy reach. When the case is a serious and complicated one, the directions given for the treatment are laid down with that minuteness and caution due to the demands of the hour. Knowledge, intelligence, and caution—beget confidence and skill.

While the more common diseases are plainly described, and the management of them clearly stated, at the same time the great value of a medical counselor of scientific training, judgment and skill, is carefully pointed out to the mother.

The author cannot let this edition go forth without again acknowledging favors from many parties. He is particularly indebted to the writings of Ruddock, Morgan, Teste, Kippax, Hartmann, Donné, Jacobi, Lethaby, Pavy, and other authors on the diseases and hygiene of children. To the many professional friends and noble mothers who have kindly contributed and emphasized many practical facts for the amelioration of suffering little ones, the gratitute of thousands must be their reward.

Hoping that this little work may continue to prove a help in time of need, this edition is permitted to go forth on its mission of mercy.

100 State St., Chicago. THE AUTHOR.

HOW TO USE THIS BOOK.

It may assist those who are not familiar with the method of selecting a food or a remedy, or in studying a disease, to know how to proceed in the most rapid and satisfactory manner.

The first thing to do is to study the child. How this is best accomplished, the reader is directed to master the facts given on pages 23 to 34.

If the child is nursed, chapter IV., as well as chapter V., should be carefully perused.

In the selection of the food, turn to page 126 and read through to the end of that chapter, then turn to page 83 and the food for the child should be apparent.

The causes of sickness should be ascertained, see chapter VIII., and the signs of disease in chapter X. Now turn to the chapter describing the part diseased, *e. g.* the mouth and its diseases, stomach, etc. Read the chapter through and the special disease should be ascertained. Sometimes there is a combination of diseases. There are usually, however, three prominent symptoms that determine the disease.

Having decided what ails the child, then read carefully what is said about the remedies mentioned, so as to ascertain which most closely corresponds to the case. All cases of one disease are not exactly alike.

Having selected the remedy (see page 390), then turn to page 189 and decide how often to give it. Consult also page 184 *et. seq.*

Errors in diet being a leading cause of disease, the selection of the food is of the first importance.

How many pounds does the baby weigh,
Baby, who came but a month ago;
How many pounds, from the crowning curls
To the rosy point of the restless toe?

Contents.

Preface 9

Introduction 19

An Ounce of Prevention Worth a Pound of Cure—One-Third of All Babies Die Before Five Years Old—Every Woman Expects to be a Mother—Helpless Innocence—How to Study Children.

PART FIRST.

The Management of Children.

CHAPTER I.

Healthy Children 23

An Infant in Health—How it Looks and Acts — A Pleasing Fascinating Study — Lines of Beauty and Points of Health—Large or Small, Fleshy or Spare, Fair or Dark —Large and Fair, Large and Dark, Small and Fair, Small and Dark—Proportion to Parents—Effects of Location, Nationality, Temperament, etc.—Child's Face an Index of its Health:—(1) The Lower Part; (2) The Middle Portion; (3) The Upper Part; (4) The Appearance of the Skin, the Tongue, Nose and Eyes—Normal Face Ovoid—Head Broad or Narrow —Chin, Full or Retracted — Neck, Thick or Small— Nose, Full or Pinched—Cheek-bones, Ears— Head, High or Low, Full Front Head, Top Head or Back Head— Hair, Long or Short —A Healthy Child—Changes in Face due to Natural Develop-

ment—Oval, not "Hatchet" Face—Flat Face—Thick Neck—Large Stomach—Full Chest—Plump Limbs—Waddling Gait—Active and Happy—Good Appetite and Sound Sleep—Proper Food Before and After Birth the Key to Health.

CHAPTER II.

CARE OF THE CHILD BEFORE BIRTH..... 34

All Mothers may have Healthy Children—Parental Health Affecting Unborn Children—Healthiest Time of Year to have Children—Growth before Birth—Necessary Care—Maternal Impressions—Hereditary Transmissions—How Mothers should Live, What to Eat, Drink and Wear—How to Work, Act and Exercise—Avoidable Accidents—How to Have an Easy Time—Will She be Able to Nurse It—Preparations for the Coming Healthy, Happy Child.

CHAPTER III.

MANAGEMENT OF THE NEW-BORN.....51

Natural Birth—How to Manage Alone—Care of the New-born and Mother—Treatment if Still-born—Proper Care if Premature and Mature—Best Way to Wash the Infant—Dressing the Cord—Proper Clothing for Different Seasons and Climates—Why It should Sleep First—When It should Nurse.

CHAPTER IV.

MATERNAL FEEDING OF THE CHILD.....61

Who Should Nurse and Who Should Not—What is Milk—First Milk, Uses—Changes the Milk Naturally Undergoes, Deviations Due to Temperaments, Habits, Food—Who are the Best Nurses, and Why—Milk of Fleshy Women, Light and Dark—Milk of Spare Women, Light and Dark—How Milk may be Improved by Food and Habits—

How Milk of Fleshy Women may be Changed by Food—How Milk of Spare Women may be Brought to Healthy Standard—Effects of Hard Work on Milk—Effects of Frequent Nursing on the Character of the Milk—Proper Food for Nursing Mothers Determined by Child.

CHAPTER V.

FOOD NEEDED BY DIFFERENT CHILDREN.....68

Why Should the Child Wait Three Days—Changes Necessary for Proper Digestion — Children may be Divided into Two Great Classes: Fleshy or Alkaline, Lean or Acid—Food Proper for Each—Signs of Milk disagreeing—How Often to Nurse Child—The Meaning of Spitting, Vomiting, Curds, Colic, Green and Chopped Stools, Sweating, Eruption, Crying—What to do When Milk Will not Agree—How to Change Milk for Each.

CHAPTER VI.

PROFESSIONAL WET-NURSES.....75

Choice of Wet Nurse — Personal Appearance, Health, Temper, etc. — Appearance of Breasts, Nipple and Milk—Starved Child Upset by Gorged Breasts—How Change of Circumstances, Habits and Food will Change the Milk—Times of Nursing Day and Night—Changes of Nurses often Needed and Not Dangerous—Exercise Necessary, Light Work Best—Expedients Resorted to by Nurses to Keep Their Milk and Places—When to Wean the Child.

CHAPTER VII.

ARTIFICIAL FEEDING OF INFANTS.....83

Many Infants Starved at the Breast—Food When Partially Nursed—A Good Careful Nurse Better than a Poor Breast—What Food to Select Determined by the Lack in the Breast Milk, and Wants of the Child Expressed

by Conditions of Stomach and Bowels—Unnecessary dread of Weaning even in Summer—Choice of Milks—Human and Animal Milk Compared—How Milk is Digested—How to Make Animal Milk Like Human—Condensed Milk—Artificial Milks—Dextrine Foods—Farinaceous Foods—Various Other Foods—Most Infantile Foods—Food for Infants Under Six Months—Changes Necessary During Bony Development—Food Grains Compared Food Necessary from Six to Twelve Months—Infantile Food for Sick Child—Food for Child Between Twelve and Eighteen Months—Food During "Second Summer"—Food Best for Children from Two Years Old and Upwards—Feeding Apparatus for Child—When to Take the Bottle Away.

CHAPTER VIII.

COMMON CAUSES OF ILLNESS AMONG CHILDREN.....162
Errors in Feeding Rank First—Effects of Climate of Europe, America, and the Various States—Natural Bias Toward Disease—Infantile Predisposition to Disease Effects of Seasons on Children—Hygienic Causes—Dietetic Causes of Disease.

CHAPTER IX.

REMEDIAL AGENTS FOR CHILDREN'S AILMENTS.....182
Advantage of Prompt Treatment—Mild Agents Best—Articles for External Use—Chief Remedies to be Kept on Hand—Directions in Reference to the Remedies.

CHAPTER X.

PROMINENT SIGNS OF SICKNESS.....191
General Hints—Expression of Countenance—Gestures and Attitude—The Cry—The Mouth and Breath—The General Surface and Temperature—The Breathing—The Circulation—The Discharges—The Urine, etc.

PART SECOND.

Diseases of the Digestive Organs.

CHAPTER I.

Functions of the Digestive Organs.....211
Signs of Proper and Improper Development and Use--Lower Part of Face Index of the Condition of the Digestive Organs—Tongue an Index of Their Functional Activity—Size and Shape of the Abdomen—A Full Round Abdomen an Index of Health—Times for Eating—No Uniform Time for All.

CHAPTER II.

The Mouth and Its Disorders.....213
Deformities, Hare-lip and Cleft Palate—The Tongue, Its Appearance—Tongue Tie--Swollen Tongue—Varieties of Sore Mouth: Thrush, Aphthæ, Canker, Noma, etc.—The First or Milk Teeth—Order of Appearance, Irregularity, Novelties—Difficult Teething—Disorders Caused and Attendant upon Teething—Teething and Indigestion—Tooth Decay—Tooth Ache—Should Milk Teeth be Pulled—Care of These Teeth—Six-Year Molar--Second Dentition--Order of Milk Teeth Dropping Out and Permanent Teeth Appearing—Crowding—Care of Teeth--Tooth Food—Tooth Powders—Tooth Brushes—The Mouth Glands: Sublingual, Submaxillary and Parotid--Their Uses and Disorders—"Drooling"—Ranula—Mumps—Kernels—Enlarged Glands—Keep the Mouth Shut.

CHAPTER III.

The Stomach and its Disorders.....240
Its Position in the Infant--Difference in Size and Shape in

Different Children—"Spitting Babies"—Simple Vomiting—Acute Gastric Catarrh—Chronic Vomiting—Belching—Chronic Gastric Catarrh—Ravenous Hunger—Colic After Eating—No Appetite—Acute and Chronic Inflammation of the Stomach—Bilious Vomiting—Indigestion.

CHAPTER IV.

THE BOWELS AND THEIR DISORDERS.....253

Ruptured Navel—Liver Disorders—Jaundice, etc.—Colic—Infantile Diarrhœa—Summer Diarrhœa or Complaint, a Serious and often Neglected Disease—Importance of Being Early and Clearly Recognized—Cholera Infantum—Severe Vomiting and Diarrhœa—Enterits, Inflammation—Cholera Morbus—Dysentery—Constipation, Its Causes and Cure—Falling of the Bowel—Ulcers, Fissures, and Strictures of the Rectum—Worms, Stomach Worms, Thread Worms, Tape Worms.

CHAPTER V.

DISEASES OF THE ABSORBENT SYSTEM.....281

General Idea—The Absorbent Tubes and Glands—Imperfect Development—Causes of Atrophy—Enlargement—Food and Management Necessary to their Proper Development—Consumption of the Bowels—Kernels in the Groins—Enlargement of the Glands in the Lungs, Consumption—Atrophy of these Glands, Miliary Tubercles—Enlarged Tonsils—Enlargement of the Glands in the Neck, So-called Scrofula—Goitre—Enlargement of those Glands in the Head—Tubercular Meningitis—Enteric or Typhoid Fever.

CHAPTER VI.

THE URINARY ORGANS AND THEIR DISORDERS.....293

Suppression of Urine—Retention of Urine Incontinence

of Urine--Wetting the Bed--Effects of Different Kinds of Food on the Urine — Dysuria, Painful Urination— Gravel--Irritation of these Organs.

PART THIRD.

THE RESPIRATORY SYSTEM AND HEART DISEASES.

CHAPTER I.

NASAL DISORDERS OF CHILDREN.....301

Outlines of Development of Respiratory System--Centre of Face—Study of Noses—Snuffles, Coryza, Cold in the Head, Acute Catarrh — Chronic Catarrh — Hay Fever — Nosebleed, Epistaxis— Foreign Bodies in the Nose — Growths in the Nose— Boring in the Nose.

CHAPTER II.

DISEASES OF THE THROAT.....308

How to See and What to See in the Throat—Common Sore Throat, Pharyngitis -- Quinsy, Tonsillitis—Diphtheria-- The Croups: Acute Laryngitis, Spasmodic Laryngitis, Pseudo-Membranous Laryngitis, Diphtheritic Laryngitis — Spasm of the Glottis, Child Crowing --Training the Throat Muscles, Voice, etc.--Changes in Voice, Management.

CHAPTER III.

DISEASES OF THE CHEST.....320

Bronchitis, Cold on the Chest--Inflammation of the Lungs, Pneumonia: Catarhal and Croupous — Inflammation of Pleura, Pleurisy—Cough—Hooping Cough—Hiccough— How to Develop the the Chest, Chest Exercise.

CHAPTER IV.

DISEASES OF THE HEART.....329
Where is the Heart—Palpitation—Angina Pectoris—Cyanosis—Endo-carditis, Rheumatism of the Heart—Pericarditis and Water on the Heart—Weak Heart and Proper Training—What is "Heart Burn"—Varicose Veins.

PART FOURTH.

THE BRAIN AND NERVOUS SYSTEM.

CHAPTER I.

THE BRAIN AND ITS DISORDERS.....333
Outlines of Development of the Brain—Upper Part of Face. How the Brain Develops—How a Child Opens its Buds—What is Memory, Uses and Abuses—Overtaxing the Brain in Childhood—How to Build a Healthy Brain—What is Sleep, When to Sleep—Sleeplessness—Night Terrors—Heat in the Head—Inflammation in the Head—Water on the Brain: Acute, Chronic, and Acquired Hydrocephalus, How Prevented—Headache—Heat-stroke, Sunstroke.

CHAPTER II.

THE NERVOUS SYSTEM AND ITS DERANGEMENT.....343
Development of the Nervous System—How to Control Nervousness—Crying—Peculiar Sensitiveness of Infants—Spasms—Infantile Convulsions, Fits—Epilepsy or Falling Sickness—Paralysis—Chorea or St. Vitus Dance—Method of Developing Self-Control.

CHAPTER III.

DISEASES OF THE EYES AND EARS.....353

Care of the Eyes—Inflammation of the Eyes of Newborn Infants, Ophthalmia Neonatorum—Inflammation in Older Children — Weak Eyes — Winking — Stye — Blepharitis —Tumors of Eye —Squinting —Earache — Inflammation of the Ears — Discharge from the Ears, Otorrhœa — General Management of the Ears — How to get Foreign Bodies out of the Ears.

PART FIFTH.

THE CUTANEOUS SYSTEM AND ITS DISEASES.

CHAPTER I.

GENERAL DISEASES OF THE SKIN.....365

Sensitiveness of the Skin—Changes it Undergoes after Birth—Red Gum—Swellings, Bruises—Frequent Washing — Tooth Rash —Swelled Breasts — Chafing, Intertrigo — Urticaria, Hives — Erythema, Sunburn — Eczema, Scald Head, Milk Crust — Chaps — Chilblains — Parasitic Diseases: Tenia, Ringworm, Shingles, Scabies, Itch Burns and Scalds.

CHAPTER II.

THE ERUPTIVE FEBRILE DISEASES.....377

Scarlet Fever, Scarlatina, Diseases Following Scarlet Fever, Dropsy, etc.—Measles, Black Measles—Rotheln, German or French Measles — Chicken-pox, Varicella — Small-pox, Variola, Varoloid — Prevention, Vaccination, Cow-pox — Roseola — Simple Fever — Warts.

PART SIXTH.

The Form and its Deformities.

CHAPTER I.

Natural Changes in the Form and Management...393

Changes of Position of the Infantile Body—Injurious Effects Due to Clothing—The Swaddling Bands of Barbarism—Proper Clothing for Infants and Children—Effects of Compression—Glaring Defects of "Hardening"—Injuries from Lifting—How to Lift and Carry a Child, Various Methods—Natural Changes.

CHAPTER II.

The Bony Frame, and Disorders.....403

How Bones Grow—Necessity and Development—Excessive Developement, Raw Bones—Tall and Short Stature—Effect of Locality—Healthy Growth—Open Head—Closed Head—Hump Back—Bow Legs—Rickets—Hip Joint Disease—Ulcer in the Bones, or "Fever Sore"—Cramped feet—Corns—Bunions—"Growing Pains," Leg Ache—Broken Bones and Deformities.

CHAPTER III.

The Muscles their Uses and Abuses.....409

How Muscles are Formed and Changes in Them, Number, Location and Various Uses—Proper and Improper Feeding and Training—Thumb Sucking—Stiff Neck—Spinal Curvature—Defective Talk and Walk, Long Strides to Keep Up—Stoop Shoulders—Deformities from Shoool Life—Constant Sitting and Standing—Pigeon Breast from Coughing and Defective Nutrition—Rheumatism of the Joints—Sprains—Dislocations from Weakness—Development and Training—A Well-Developed Boy and a Model Girl.

Index and Glossary 417

THE FEEDING AND MANAGEMENT OF INFANTS AND CHILDREN, AND THE TREATMENT OF THEIR DISEASES.

INTRODUCTORY.

AN OUNCE OF PREVENTION WORTH A POUND OF CURE.

The truth of the statement made by the renowned Hufeland fifty years ago, that "one-third of all diseases belong to the age of Infancy," is coming to be generally admitted, and there is a great desire for more information about children: their feeding, management, and the prevention, as well as treatment, of their diseases.

Statistics record the hard, sad fact, that quite one-third of all babies die before they reach the age of five years. Children make up about one-tenth of the population, and yet nearly one-half of the mortality list of our large cities comprises children under five years. Pædologists, or those who make a special study of chil-

dren's diseases, have sought long and diligently for the causes of this unusually large death rate. Among the animals no such enormous destruction of the new-born occurs. If it should happen one year what a commotion would take place among stock raisers! How carefully would the facts be collected, and how skillfully would they be analyzed, that all possible information might be gained as to the causes and the method of averting so dire a calamity. Why is it that the sickness and death of children give rise to so little public concern? It is not due to indifference! What then? (1.) An inability to get at all the facts in every case, (2.) A kind regard for the feelings of the friends, and (3.) Lastly and chiefly on account of the ignorance of the laws of health—how to feed and manage children.

The large per cent. of the sickness and death of children being due to diarrhœal troubles, has led to the conclusion that "the saving of child-life is then largely a matter of good housekeeping and proper nursing." Epidemic diseases are of course excepted, but even here it is generally admitted that good sanitary surroundings with proper management would save many more than now survive. Mothers are especially interested, and upon them must rest much of the responsibility of preventing, as well as lessening, disease.

Every true noble woman expects to be a mother, and every mother hopes to have healthy, happy, children; it is therefore woman's right that she have all the information possible on this vital subject. Ignorance and inattention here will bring about the degeneracy and

final extinction of the race. It is every woman's heaven endowed privilege, to be the best of mothers, or the most skillful and competent nurse. How to feed, manage and train this frail specimen of humanity, we call a baby, so as to keep it healthy and well, is a most interesting problem.

HELPLESS INNOCENCE.

A child is the most helpless of all new-born creatures. For about a year it must be cared for constantly. It cannot help itself, it cannot even feed itself; it cannot move out of harm's way. For years it is the subject of watchful care. Such a being can only be entrusted to the most intelligent of all earthly creatures. To mould such a life to its highest physical, mental and moral development is a maternal mission. Is it any wonder that mothers feel the need of special instruction for their peculiar duties?

To conduct an infant through all the disorders and danger incident to child life is often quite as difficult, and far more noble than many heroic achievements.

What more interesting study than to watch a child grow and develop, from day to day; its cheeks fill out, its color hightens, its form grows more plump, its eyes brighten and follow in wonder the movements of attendants or be fixed "in a brown study" upon the face of its mother. Now it smiles, and anon crows, kicks, squirms and laughs. It is the sunshine of the home, and is willingly, lovingly cared for.

But the sky darkens, the eyes close, the form droops,

the face appears sunken and sad, the child refuses food, and starts in affright when moved. The child is evidently sick. But what is the matter?

The physician compares the normal or well child with the abnormal or sick one, and arrives at a conclusion as to the nature of the disease. He must first compare this child with the healthy standard, to ascertain where it is sick and how severely so. No two healthy children are exactly alike. They will differ in habits, tastes and ways. These individual peculiarities must be taken into account in studying sick children. These peculiar bodily habits may lead to disorder, in fact they may be the cause of the peculiar trouble the child now suffers with. The condition of each organ is carefully inquired into. The whole symptoms are grouped and compared with the leading features of some disease, and the decision is perhaps only reached after a long period of careful examination and thoughtful study. Now a similar process of examination, comparison and thought is often necessary to decide upon the treatment. While to select the food, a long inquiry is often needed to determine what is lacking in the system, and which food or food element will supply it, and finally, can food restore the child alone, or will it be necessary to call in the help of a remedy.

These are some of the problems that every child calls up, and which every mother must solve or try to solve, before she seeks the aid of her medical adviser. To make plain and easy the study of infantile diseases, healthy children must be closely observed.

THE MANAGEMENT OF CHILDREN.

CHAPTER I.

HEALTHY CHILDREN.

AN INFANT IN HEALTH.

An infant in the bloom of health is a most pleasing picture—an interesting study. It sleeps most of the time, awaking only when in distress or aroused by hunger.

We will study the little cherub while it sleeps. Its face is round and plump. Its skin is soft and rosy. The lips are full and slightly separated, and we can just see the tip of the tongue which we find resting in the roof of the mouth. The nose is short, flattened with well dilated nostrils. Although this stumpy nose is the source of anxiety to some mothers and friends, we shall see that it is all right. To grow and develop is the work of the little being we are studying. The eyes are closed and nearly buried out of sight by wrinkles of fat. It has little use for its eyes for the present. Its ears are small and compressed tightly to the head. Their use is yet to be developed. Its forehead may be small and rather flattened, while there may be the slightest excuse for hair on the top of its

head. As it lies cuddled in its mother's arms, helpless innocence, all hearts are won towards it.

We talk of its beauties, of its cunning little pink fingers, it does not rouse at the sound of voices. It neither hears nor recognizes, but we touch it, when at once it arouses, and like a little bird opens its mouth. Feeling is the first wide-awake sense. This is a wise provision. It feels hunger and pain, and soon comes to recognize strangers by the difference in the handling. This sense of feeling being so acute, sounds the first signal of disease, and is of great value in helping us to understand the nature of the trouble. The infant's whole work is to eat and sleep. It eats and sleeps, and sleeps and eats, and *grows* apace.

LINES OF BEAUTY AND HEALTH.

There are points of health that attract attention at once. The full, fair face, dimpled chin, curly hair, dancing eye, and happy merry expression, make a picture that none can overlook. We can best study a child naked. As the nurse carries the little one to its bath, we observe its plump arms, full rounded body and large, well-developed abdomen, indicating vigorous digestive capacity. These points of health are more apparent as it sits "enjoying its bath." A flattened stomach in an infant is an index that the system is not being properly nourished. Along with

this will be noticed a pointed face, attenuated limbs and prominent bones. During the first two years we should not be able to see an outline of a bone anywhere. They should all be covered with cushions of fat, which gives to the skin that peculiar fair appearance that is recognized everywhere as the standard of beauty.

LARGE—FLESHY—DARK.

A healthy child should be large and plump. It should not be too large nor too fleshy, although an infant may be thin in flesh when born and still grow rapidly and become a fine large child. A small fleshy child will not grow as it should from the obstruction of the fat.

A large plump child should have dark hair and brown or gray eyes. If it is fair as well as large it will be very liable to disease. Such a child, to reach the healthy standard, should be under, rather than over fleshy. Its food should be given with an idea to increase the red blood and color.

A small dark child is below the healthy standard, and is very liable to inflammations. A small child should be light, and the food elements required are the ones to increase the proportion of the white blood and connective tissue.

The red blood carries the coloring matter; hence, the more red blood the child has the darker it will be. The more white blood (fat) the child has the fairer it will look. The dark child is the healthiest as a rule. The food has a very important bearing on the question of light and dark complexion—aside from race and latitude.

PROPORTION OF CHILD TO PARENTS.

Whether a child is large or small must be decided by the relative size of the parents. The average weight for the mass of people will vary greatly. Thus the child of the giant may, as in one instance, weigh eighteen pounds, while that of the dwarf may not reach five pounds. The former may be under weight and the latter over weight. As a rule, large parents should have large children, and *vice versa*. Where the parents are nearly six feet high and well proportioned, a child twelve pounds in weight would not be much above a proper proportion. It often happens that a small woman has a large child, and a large one a small child. The reason why will be explained in the next chapter.

EFFECTS OF LOCATION, TEMPERAMENT, ETC.

Locality seems to have a good deal to do with this question. In new countries children are relatively larger than they are in older settled countries. In the west the average is between eight and nine pounds, while in France it is only about seven.

Nationality has also a marked influence, but here the average proportion is usually maintained.

Temperament has a decided influence. The bilious lymphatic have as a rule the largest children, while the nervo-sanguine have bright little babies. There are, however, marked exceptions, within the healthy limits.

THE CHILD'S FACE IS AN INDEX OF ITS HEALTH.

Notwithstanding all the influence of parents, locality, nationality, temperament, etc., the child must be judged largely by its appearance. The healthy development of the three vital cavities and their organs is indicated by the development of different parts of the face.

(1). The lower part of the face is an index of the development of the abdominal organs. If the cheeks are full, the chin and lower part of the face well developed, the digestive capacity will as a rule be equal to emergences.

(2). The middle portion of the face points to the condition of the chest organs. The broader this part of the face the fuller will be the chest. The more dilated the nostrils, the better the breathing capacity as a rule.

(3). The upper part of the face indicates the development of the brain and nervous system. In the infant this portion of the face should not be too full.

(4). The appearance of the skin should be fair, with a healthy blush. The lips should be thick, the nose broad at the tip, the eyelids full, and the eye of moderate size. These are the special points for study in the face of an infant.

FACE OF HEALTHY INFANT OVOID.

It will be seen that if the lower part of the face is as full as it should be, it will give an ovoid form of face, especially if the head is broad.

A broad head indicates a firm hold on life, while a

narrow head is an index that the child will be feeble. If the upper part of the head is broad, unusually so, the lower part will appear narrower than it really is.

If the chin is retracted there is usually a corresponding weakness of the digestive organs. As eating is one of the most important functions in a child, the mouth should be of ample capacity in depth as well as breadth.

The neck should be thick in a healthy child. If the neck is short it will appear larger than it really is. If long, it should also be thick. A long spindle neck indicates a very feeble grip on life. A child may be born with a very slim neck and soon fill it out to its normal healthy standard. This connecting link between the brain and body should be ample in thickness for any strain.

The nose standing at the entrance of the breathing organs should be broad and the nostrils well dilated. If the nose is narrow and pinched, it will be a serious obstruction to respiration, causing the child to breathe through its mouth — always a sign of disorder.

The cheek bones should be full but not prominent, as we find in the "hatchet" face. They should correspond to, and fill out the ovoid curve from cheek to forehead.

The ears are usually flattened, especially for the first few weeks, but if the head is very broad at the base, they will stand out. If both long and large, they indicate vigor and longevity.

The head as a whole, taking the opening of the ear as the lower line, should not be too high. A narrow head appears high while a broad one appears low. A

narrow head with an ample body facilitates development, while a narrow head and a slim body is an index of weakness. A high, broad head should have an immense body in proportion.

Taking the ear as the centre of the side head, the development of front head, top and back head has a bearing on the healthy standard. The ideal head is a semicircle, but an infant usually has more back head with rather low forehead. No part of the body changes so much as the shape of the head, as we shall see. Like a piece of dough it can be moulded into any shape, for weal or woe. The better developed the head is the less hair it is covered with and *vice versa*. Still there are exceptions to this. The question of long hair, or no hair, like that of the shape of the head, is not so vital as that of the bodily development. A plump, well-formed body with ample digestion and sound sleep, will rapidly change other parts of the body and bring them up to the healthy standard. The most notable change will be that the ovoid face will gradually change to an oval, chiefly from the development of the forehead. This change should not occur too early. The oval face is the standard of longevity, as well as of beauty.

THE CHILD IN HEALTH.

It is called an infant until it reaches the second year, or strictly speaking, until it has all of its milk or first teeth. From that date until it reaches puberty it is a child although it may take on, or be given, the dignity

of a "young man" or "little lady" long before adolescence.

A healthy child is an object of admiration more from the activity of body and mind than from the outlines of form. In fact the form is often quite overlooked, but what it does and says is a matter of careful record. The face and its varied expressions is the centre of attraction.

It should be generally known that the face changes in shape as the child grows. The forehead expands upward and forward from the development of the front brain, the eyes grow more prominent, while the lower part of the face is not so full. This change in shape gives to the healthy child an oval form of face, well seen on next page. If the digestive organs lose their normal activity, we have a flatness of the cheeks that gives the dreaded "hatchet face"—a form that indicates a very feeble hold on life. The cheeks should never lose their plumpness.

However much the upper part of the face widens, the portion about the cheeks, ears and neck should never grow thinner. The lower part of the face should not lose its prominence. Sometimes the face appears full, as we shall see in studying diseases of the stomach, but this should not deceive us, for the rest of the form loses its plumpness and the appetite grows fickle. The growing child demands the most watchful care to keep the young body up to normal standard.

The change brought about by growth, often gives a child from two to six years of age, a not very much

admired "flat face." But if the neck is thick and wrinkled with rolls of fat, the shoulders broad, the chest full, the stomach capacious, the limbs plump and the gait waddling, there will be a royal independent air about the child that is most pleasing. Whittier has caught the inspiration of such a healthy happy child in his "Barefoot Boy."

"Blessings on thee, little man;
Barefoot boy, with cheeks of tan."

Prang has transfered the poet's ideal to canvas, and kindly contributed a picture of the boy for this work for the benefit of mothers who are looking for a model. A healthy child is active and happy. Activity its muscles demand, but at the same time under proper restraint. Activity that takes away the appetite and disturbs the sleep is not good. A good appetite and sound sleep are the best signs of health in a child.

While the child is rapidly developing is the most difficult time to make up for defective nutrition before and after birth. The tendency will be towards chronic gastric irritation and imperfect development. Proper food before birth as well as immediately after it, is really the key to the subsequent health of the child.

CHAPTER II.

CARE OF THE CHILD BEFORE BIRTH.

It may seem like a sweeping assertion but one that the author believes will be substantiated, that

ALL MOTHERS MAY HAVE HEALTHY CHILDREN.

As the child during the first months, like a chick in the egg, draws its nourishment by absorption, therefore its growth and vitality depends upon the health of the ovum and the character of the serum of the blood. When the after-birth unites the child with the wall of the womb, the character of the blood that passes directly from mother to child determines its growth and vitality. Again the health of the unborn infant is determined by the quality and quantity of blood furnished it. The blood varies with the food and the powers of absorption of the mother. Good nourishing food is readily absorbed, and is always prescribed to make blood. If a good supply of rich blood determines the health of the unborn child, then this vegetative stage of existence is largely under the control of the mother. Whether a woman *may* have a healthy child will be decided by: (1.) The vitality of the ovum that is to be developed into a child, and (2) by the food (blood) that is to be supplied to it.

PARENTAL HEALTH AFFECTING THE UNBORN CHILD.

It is generally agreed by physiologists that the sperm furnished by the male passes through the ovum of the female, and starts the motion in said ovum that finally develops the wonderful being we call a child. If the ovum is imperfect then this growth may be arrested at any point or may be imperfect, giving us a feeble sickly infant.

One cause of barrenness is that these ova are not matured. There are a great many imperfectly developed girls and women. (See Diseases of the Stomach.) As one or more of these ovum is given off by the ovaries every month, the character of the flow will help to decide the question whether such a person can have a child at all, and also whether it may be healthy. As other parts of the body may be developed by proper attention, so may this part, especially during the growing years. Much of the charge of crime that is heaped upon American women is a false accusation. The cause of their sterility is due chiefly to imperfect development of body, and not to moral obliquity. If half the attention had been given to teaching them how to acquire the proper physical development, more good would be accomplished. "To err is human, to forgive Divine."

The diseases that interfere with healthy maternity, put down are: Mania, epilepsy, consumption, syphilis, scrofula, etc. Mania is usually a form of inflammation

of the brain that diverts so much blood to that organ that the growing child is robbed of nourishment. No husband should allow an insane wife to become pregnant. The same is true of the epileptic. Consumption itself is an evidence of imperfect development of nutrition or respiration, and interferes with maternity. But even here with proper food a healthy child can be had. Where both parents are constitutionally diseased from syphilis, the ova are usually blighted. But even here under proper treatment and with food adapted to the needs of the growing child, a healthy being may be born, and especially if only one person is infected. Scrofula, so-called, is simply a form of derangement of the absorbent system (see Diseases of the Absorbent System) and is entirely under the control of food and proper surroundings. Such a mother can have a healthy child. There are other diseases and deformities that interfere with child-bearing. But it is the firm conviction of the author that a properly developed wife who can conceive, may have, with proper care and treatment, a healthy happy child.

HEALTHIEST TIME TO HAVE CHILDREN.

The healthiest children are usually born to mothers between twenty and thirty years of age. Under the former date they are more muscular, while after the latter there is more nervous development, as a rule.

The spring of the year is the best time for children to be born. Statistics shows that the largest number of births occur in March. There is more ozone, more

activity and more vitality, in the spring months. When the epidemic of moving or house cleaning will seriously affect the health of the mother and child, or where it is desirable to get seven to nine months growth before the wilting days of summer come, then it is better that the infant wake the stillness of the autumn air. The fewest births of all the year occur between June and December. Whatever time the mother's health is best, that is the time for her to mould a healthy infant. In spring it is easier to get a new milch cow for a child that must be fed. Where the mother's health suffers from nursing, then have the child when its food is most convenient to be obtained.

GROWTH AND CARE.

The growth of the human ovum, from a few grains up to several pounds in weight, and from less than a line to eighteen inches in length, is simply marvelous. The child in utero grows about two inches each month. I have a six weeks fœtus in my office (at least the miscarriage occurred at the second month) that is perfect, even to fingers and toes, the sex also can be distinguished and it is only an inch and a half in length. From the moment of conception, growth and development go on rapidly. The nutrition first occurs by absorption and then, when the placenta is developed, by direct circulation of blood from mother to child. The first muscular effort is recognized about the fourth month. The child is then about eight inches in length. The extremities are the slowest to develop, consequently

the straightening out motion called "quickening" occurs either before or after the fourth month, as the muscular system is strong or feeble. Where motion is strong the muscular system is well developed. If the form is large and the motion vigorous, the child will be of good size. A large, well developing fœtus, as a rule, does not manifest much activity until near term. Its motions are vigorous but not frequent, unless the mother is excited. An improperly nourished child will be apt to be excessively active. It then needs more fat and serum to keep it quiet and to develop it properly. The care necessary should be directed to proper food and necessary activity of body and mind.

MATERNAL IMPRESSIONS.

The ideas and impressions that torment the expectant mother are often about as vague and vivid as those of a dyspeptic. When we come to speak of stomach disorders we shall see that they may be congenital. Derangement of the stomach may be the chief cause of the morbid impressions that seem to haunt some women night and day, and that occasion them so much anxiety for fear the child will be "marked" in some way. What a relief to find the child all right. Of the thousands of births annually, how very few are visibly marked. The advice of the ages is impressed upon the race that pregnant women should avoid the disagreeable; and instinctively as it were they yield to this wisdom. Nothing affects the circulation like a fright and the shock to the muscular system is so great at

times as to cause it to stand still in tonic spasm. If "the heart stands still" the flow of blood to the fœtus through the placenta may be obstructed temporarily or permanently, and the child be correspondingly affected. In that way serious injury may result. Therefore anything that would cause such a shock should certainly be avoided. The traditions of mother's marks that are handed down from generations, have in them some truth, although many medical writers have not been able to connect the effect with any clearly defined cause. The impression that her child will be marked should be told to her medical adviser, for he may find that it is physical and not mental, and readily removable by proper diet or treatment, or both. He will not overlook the well known physiological fact remarked by Carpenter, that attention fixed on any part for a long time, may change its function, and be able to change the current of thought. It is the belief of the author, that a mother can mould her child, physically, mentally and morally; that she is an artist of the highest order; and that it should be her aim to develop a splendid child. The ancient Spartans had statuary and paintings to stimulate the desires and hopes of their noble matrons. Constant association produces impressions that are lasting. Thought is, however, royally independent. Let those that must impress the coming child be the grandest, wisest and best.

Hereditary transmission is one of the most interesting problems, and many facts have been collected in reference to it which we cannot incorporate, but

Lewes, in Physiology of Common Life, reviews all the evidence and finds it establishing the following important positions:

"We inherit from our parents the general form and features, the bony, muscular, nervous, aud glandular structures; there is no absolute constancy in the transmission of any one part of the organization; but just as the features may be curiously compounded of the features of both parents, or the eyes and mouth may resemble those of the mother, while the chin, nose, and brow resemble those of the father; so may the various parts of the body be a *compound* of the organs of both parents, or a *distribution* of the organs of both parents. With this inheritance of the general organization, we necessarily inherit its tendencies. We inherit the temperament, the longevity, the strength, the susceptibility of one or both parents. We inherit the tendency to scrofula, epilepsy, or mania. We inherit the nervous system, no less than the muscular and bony; and with the nervous system, we inherit its general and particular characters — that is to say, the general sensibility of the system, and the conformation of the brain and sensory ganglia, are as much subject to the law of transmission as the size and conformation of the bony and muscular structures are. This being so, it is evident that all those tendencies which depend on the nervous system will likewise be inherited; and even special aptitudes, such as those for music, mathematics, wit, and so on, will be inherited; nay, even acquired tendencies, and tricks of gesture, will be inherited. But

this inheritance is in each case subject to the influence exercised by the other parent; and very often this influence is such as to modify, to mask, or even to entirely suppress the manifestation. A man of highly susceptible nervous organization, a man of genius, marries a woman of powerful organization, but of rather inferior brain; the influence of the mother is such, that the child turns out perhaps irritable, nervous, but intellectually feeble; or healthy, vigorous, and commonplace; or even stupid, and, it may be, idiotic. Or both parents may be remarkable for intellect, yet because their nervous systems have been developed at the expense of their nutritive systems, their child may be susceptible, but puny and feeble."

The venerable Dr. Baer who has given this subject much attention writes:

"Physicians often notice children born with very large and projecting cerebellums, and at the same time, very small, receding, smooth cerebrums. These are objective results of the mother's state while forming the fœtus and go very far to prove her want of mental advancement during the period of gestation, and, to my mind, proves most conclusively that her temporal, household, manual obligations were the prevailing topics of her thoughts and actions. Then, again, he will find cases where the cerebrum is well developed, prominent, and both the reflective and perceptive faculties protuberant, with a longer fiber than that of the cerebellum. Here, the mother has evidently been among her books, or gaining knowledge from lectures, conversation, or

other modes of mental culture. The child's development is markedly in correspondence with its mother's retrograde or progressive states. The mother is the store-house for the fœtus, both physically and mentally; and the embryo is the recipient of all that the mother has to spare. Localities, distances, substances, heights, depths, animals, life, death, Deity, each may be impressed upon the mind of the embryo, though vaguely, yet ineffacebly. Let all physicians make this phase of human life as much of a study as I have done, and surely great light will shine upon what we now see and comprehend but darkly. I hold it as a moral and Christian duty for the physician, as a philanthropist to his race, to instruct all young married partners how to beget their offspring, that they may improve the race and not retrograde it."

MATERNAL MANAGEMENT DURING GESTATION.

The importance and gravity of this subject renders it one that should demand very careful direction as to the care which women ought to take of themselves during pregnancy, with regard to their own and their infant's welfare. However highly a woman may have been educated, she unfortunately finds when she has no longer to live for herself alone, that her acquirements and accomplishments are usually of small service to her, in the new duty which now devolves upon her.

We can here only give the general management. The family medical adviser should be consulted in all cases as to the special care needed.

The diet should be simple, light, nutritious and adapted to the requirements of the individual and the condition of the digestive organs. There is often a craving in pregnancy for unusual articles of food. These may sometimes be allowed within certain limits, provided they are such as do not derange the stomach. Highly seasoned and rich food, as well as tea and coffee should only be used in moderation, and alcoholic stimulants are—to say the least—generally unnecessary. The diet of the mother should be chiefly solid, substantial food. A spare diet is injurious. Unhappily, however, it is less easily avoided, and many of the wives of the laboring classes not only suffer much themselves from their inability to procure a due supply of wholesome food, but in consequence give birth to feeble and unhealthy children.

The direction of some would-be hygienists, to avoid the use of articles of food that aid the formation of bone, is a species of fœticide that should be discountenanced. The plea that it will render labor easy, is akin to that of producing abortion "to save the *health* of the mother." My observation has been that difficult labor is not usually the result of ossified cranial bones, but rather to a large brain from excessive activity of the nervous system, and to feeble muscular development in the mother. The direction to live on ripe fruits, farinaceous food, etc., take sitz baths, etc, accomplishes the result by making the life of the mother more vegetative, therefore, both she and the child have more physical energy and less nervous development. Such a

child, must, however, manifest less nervous activity and mental capacity. "Weaker and wiser" is the penalty of civilization. Still there is a judicious abstinence from mental activity and nerve food supply that should be directed.

The law of diet should be borne in mind, viz., to supply the lack of the system. If the woman is spare, every effort should be made to fatten her. Liquid food, as soups, milk, milk toast, oatmeal and milk, hot water with milk, starchy food, fat food, if it can be taken, and sweets, as well as quiet will tend to increase the vitality and vegetative life of both mother and child.

When the opposite condition is met, the effort should be to prevent grossness, which interferes with the normal development of the infant. It is well known that gross mothers are not good milkers.

The best drink is water between meals and milk and warm water at the meals. (See How to be Plump.) If the mother is inclined to be fat, then she should take sparingly of fluids.

The clothing should be warm and comfortable, especially avoiding tight bands, and the use of corsets. The breasts and the body particularly require to be secured from injurious compression, and the dress and undergarments should be so made that they may adapt themselves to the increasing size of those parts. Woolen drawers should be worn, in order that the abdomen which pushes out the dress, may not be injuriously acted upon by cold air. Delicate women, especially if they have long been accustomed to corsets, and if their

abdominal muscles are relaxed, sometimes derive benefit and support from an elastic bandage or a broad flannel roller applied around the lower part of the body; it must not be tight, however. I have devised a light elastic Abdominal Support which has given great satisfaction in all cases where such an article is needed. A woman carrying triplets found great relief from such a bandage, as the dragging on the abdominal muscles was very great. Where the circulation of the blood is languid, the lower extremities and feet will be cold, and will require to be protected by warm stockings and thick boots.

A tepid bath, every day or two will contribute greatly to the comfort of the pregnant woman. For those who are of spare habit, a sitz bath taken at first weekly, and then daily during the last month of gestation, will aid fœtal growth and at the same time render labor more easy by relaxing the ligaments, and strengthening the muscles. The use of a flesh brush or coarse towel over the entire surface of the body will help equalize the cutaneous circulation.

The best way to take this bath is to have the water warm first, then add cold until the body is slightly cool, then get out. The bath should not extend longer than three to ten minutes.

Light housework is perhaps the best exercise; the pregnant women should not be made a captive, but should exercise in the open air, in all seasons, care being taken however, that it is not carried to the extent of fatigue. Walking, which is the best and

gentlest means of taking exercise, should be indulged in daily. Riding on horseback, dancing, and other kinds of violent exertions should be carefully avoided. Constant activity, as well as hard labor, lifting, etc., has a marked effect upon the vigor of the child. In one case I attended, the mother who worked hard, constantly active up to the hour of labor, was delivered of a very small, feeble child, that was constantly ill. It died of a slight attack of capillary bronchitis. Another feeble child had this history: Mother did not want it; was very active; took no dinners; craved stimulants; threatened with miscarriage at fifth month, consequently the child was very feeble.

She should never nurse the sick. The pregnant mother should have unbroken rest and freedom from anxiety of mind during the day, so she can sleep easily and readily.

The pregnant woman should avoid all causes of undue mental excitement. This is as necessary as the avoidance of physical exertion. There is during pregnancy an unusual susceptibility to mental impressions, and this should not only be borne in mind by the woman herself but by those who associate with her. Strong emotions whether of joy, sorrow, or anger, affect primarily the nervous system, but indirectly the most of the other organs of the body. Observations have long established the fact that such emotions influence the state and functions not only of the digestive and glandular, but muscular organs, as the heart and uterus. Physicians are familiar with cases in which vivid men-

tal impressions produced uterine contractions, and even miscarriage, or have disturbed the catamenial function. Therefore the associations and cares of pregnant women should be such as conduce to cheerfulness and equanimity. The condition of mind the mother should cultivate is that of easy self-control. Towards the last the languor of mind is often so marked as to cause distress for fear her child will be a fool. It should be remembered that the weight of the child presses upon the blood-vessels, interfering with the flow of blood to and from the brain which causes this condition. (For more elaborate illustrations on Hereditary Transmissions see Treatise on the Diseases of Infants and Children, Vol I., pp. 100-110.)

AVOIDABLE ACCIDENTS.

Women during the months of gestation are liable to many accidents that are quite avoidable. The tendency to miscarry at each return of the month is common and necessitates extra caution for a few days, each month. Lifting heavy weights and reaching both produce severe forcing down of the womb, which may result in defective expansion if not of miscarriage. Shocks of all kinds, either from sudden movements, or fright or joy should be avoided, but if they come, lie down and keep quiet until the muscular trembling or weakness has passed off. Many accidents occur from going about in the dark at night. Running against the corner of a table, for example, may maim the child for life. The only case of amputation of the limb in utero, the author

has met in a practice of many years, occurred in a woman who fell on the edge of a tub, about the sixth month. The right foot was missing from above the ankle. Many pregnant women are very careless running around alone when it is slippery, and think nothing of frequent falls, even to rolling down stairs. It is a wonder that more children are not maimed. The constant fear of accidents should also be avoided, for that will make a shrinking, timid child, that cannot enjoy the rush of earnest life. Moderate care and caution are safest for mothers and best for the coming healthy, happy, hopeful child.

HOW TO HAVE AN EASY TIME.

It is but natural that a woman should look upon labor with some misgivings. In these days of anæsthesia it is but proper that the physician should assure the anxious one that she will not be allowed to suffer, he will give her Chloroform, *if necessary*. How much comfort has this promise given mothers. It is no easy thing for the child to pass the maternal passages without distress. This is apparent even in the lowest animals. If there has been profuse leucorrhœa, with a corresponding soreness (ulceration) of the neck of the womb, the difficulty and suffering are increased. This may be largely prevented by proper bathing as already indicated. Again, if there is spinal irritation or inflammation of the ovaries or other organs, and a large development of the nervous system, the suffering will be felt more keenly, but even here by proper bathing

and treatment, inflammation may be allayed and the system so blunted that acute suffering will not occur.

If her children are usually large, their growth may be interfered with by eating fruit and acid articles of food at her meals, *e. g.*, one or more oranges, baked apples, lemons, some grapes, cucumbers, buttermilk, etc. If there is a tendency to dropsy, the fruit should be partaken of freely. An excessive amount of these acid articles should not be taken, especially towards full term or the child may be very emaciated, and although labor will be easy it may have a struggle to live. Is it not better that the mother suffer a little rather than stunt the baby? Labor may be rendered quite easy by oiling the muscles of the back, hips, and lower part of bowels. If much oil is used upon the abdomen the growth of the child will be greatly increased thereby.

PREPARATIONS NECESSARY.

"Shall I be able to nurse my child?" is a query that may be answered before birth. If a light or watery fluid can be drawn from the breasts all will be well. The nipples may be hardened by bathing them once a day during the last month, in dilute beef brine or a mild solution of salt. No rough rubbing should be used. The nipple should not be squeezed, as that closes the milk tubes that make the end of the nipple look like a strawberry. If the breasts are small they may be increased in size by bathing them in oil once a day. Rub gently toward the nipple then wipe off all the oil that is not absorbed.

Anxiety about the preparations necessary should be avoided as nervousness does not facilitate matters. The effort to get a quantity of elegant clothes for the coming stranger is not the best frame of mind for the mother. As it will or should spend most of its time in bed, it should have loose light comfortable clothes. A band, light flannel shirt and skirt and slip are all the clothes that it needs, aside from a good supply of diapers. But of this more anon. The best preparation for the mother is a quiet, cheerful, hopeful frame of mind.

The question of sex will be an absorbing one. It may interest the mother to know that it is quite definitely ascertained that the more rapid the fœtal heart beats, the more certainly can we determine that it will be a girl baby. It may surprise those not informed that frequently two beats may be felt, one where the afterbirth is attached and the other is the child's heart. The latter is more rapid than the former. This and many other questions better be referred to the family physician.

CHAPTER III.

MANAGEMENT OF THE NEW-BORN.

NATURAL BIRTH.

Natural birth is a comparatively easy process. Fright, anxiety, disease and deformity may render it difficult. The muscular walls of the womb and abdomen force the child through the passages. It takes time to accomplish this, chiefly because the passages must be dilated or stretched. The first labor is usually much longer than the rest of the labors. The womb first opens, then the membranes are forced through and burst from the pressure of the head and the water, then the head comes on down, stretching the external passages. The passage of the head is the most difficult, then the body follows rapidly. The cord is tied and cut and the child removed. The after-birth is forced out after a little by labor pains. This in brief is natural labor. If very difficult, Chloroform may be given and long fingers made for the purpose, passed up by the physician on each side of the head and gentle traction aid the birth. This is called artificial delivery.

HOW TO MANAGE ALONE.

Many mothers on the frontier and elsewhere find themselves in labor all alone. It will be seen by the

above that time and contraction are the chief elements in labor. A few hints may be given how to manage if alone. During the first part of labor the pains dilate or open the womb, therefore it does not help much to "bear down." The head and shoulders of the woman should be high. When the "waters break" the womb is usually open, and the feeling to "bear down" is irresistable. Now it does good, but it should not be violent at first nor continuous. Each pain is followed by rest. During the first part of labor she may walk about, but now should rest and sleep if possible. This drowsy state lessens the feeling of suffering. The bowels and bladder of course should be empty, as the head comes down the pressure in all directions is great. If the parts are hot and sore, oil or bathe them with water. This will help them in their work. Now lower the head, laying flat on the bed which should be well protected. The underclothes should be drawn up above the waist. Now the pains are often far apart but if strong when they come this is all right. Don't be in a hurry. When the head is born, feel if the cord is about the neck. If so loosen it. If possible prevent the whole of the body being born with one pain. When the shoulders are born clear the child's throat out with the finger, then it will cry lustily. The last pain will bring the body and the afterbirth low down. Lift the child's head away from the waters, remove the cord if about the neck, and wait until the cord stops beating, then divide it about two inches from the child's body. It may or may not be tied first. Now wrap it

in a flannel and place it out of the way. To deliver the after-birth, wait for a pain then push down on the womb, and it will soon pass out. Now the empty womb should be about the size of the fist. The only danger is from flowing too much. If there is such a tendency, the womb will increase in size very much. To prevent this the womb may be held with the hand for about an hour, after that danger is over and the child may be attended to.

CARE OF THE MOTHER AND INFANT.

The first thing both mother and child needs is rest. If wrapped up warm, it usually goes right to sleep. The mother should first be made comfortable. The placenta removed and the soiled clothes taken away, unless she is very much exhausted, then she needs quiet. Some women are able to get right up and take all care of themselves, but the majority have to keep quiet for several days or weeks. If the muscles are very much relaxed and weakened, a bandage should be worn until they are strong, otherwise a bandage is not necessary. The mother should now have food adapted to her needs and that of the infant *i. e.*, food to increase fat, blood and milk.

CARE OF STILL-BORN INFANTS.

Children are sometimes born *apparently dead*, and if means are not quickly adopted, this condition may pass into one of real and permanent death. But so long as

the heart continues to beat, even but feebly, there is a probability that well-directed efforts will be successful in exciting breathing.

Constitutional feebleness, so that the effort necessary to commence breathing cannot be made; obstructed circulation during labor by pressure or twisting of the navel-string; too long-continued compression of the head; tenacious mucus in the mouth and throat, preventing the entrance of air, etc., are the chief causes.

The first efforts to promote breathing are to be made before the navel-string is divided. Obstructive mucus should be carefully wiped away from the mouth and throat, and the general surface exposed to cold air; an attempt should then be made to excite the function of breathing by blowing in the infant's face, sprinkling cold water with some little force on the face or chest, or alternately cold and hot, and by giving several smart blows with the hand, or with the corner of a towel wet with cold water, on the buttocks, back, and chest. The back and limbs should be well rubbed, while the face is *exposed to the air*.

The following is another capital method of exciting breathing:—Close the infant's nostrils with the finger and thumb, press the windpipe gently backwards, and then blow into the mouth, so as to drive the air into the lungs; afterward press the ribs together, so that the lungs may expel the air. This process should take place about fifteen times in one minute, and if persevered in, is most likely to be successful in a short time. Meanwhile the body should lie on a flat surface, and be

well rubbed with warm flannels, and the head not suffered during these efforts to fall on the chest.

If these means are not successful, and pulsation has ceased in the navel-string, it should be divided as before directed, and the infant plunged into a warm bath, 98° Fahr., or what is agreeable to the back of the hand. If the sudden plunge does not excite breathing, it will be no use keeping the infant in the bath beyond a minute or two, and Dr. Marshall Hall's ready method may then be tried as follows:

"Place the infant on its face; turn the body gently, but completely, *on the side and a little beyond*, and then on the face, alternately repeating these measures deliberately, efficiently, and perseveringly fifteen times in the minute only."

If that does not start respiration, take the child by the heels and suspend its head down for a few moments then try Hall's method again. When the face gets pale again suspend it head downward, and again resort to artificial respiration.

CARE IF PREMATURE.

Premature infants need a peculiar care and should have the first attention. If still-born they need the above treatment. If the respiration is established but the cry feeble, evidently from debility or general weakness, then the child should be kept covered or partially so, while the cord is being ligated and the nurse is making preparations for its reception. I have found that a roll of cotton batting is the best and most

convenient article in which to place a premature infant. If very premature, no effort should be made to wash and dress it. The surface may be rubbed off with oil or lard, a portion at a time, and a thin piece of muslin put inside the roll of wadding next to the infant. The cord should be left without any wrappings except a wind of soft cloth. The whole child should be enveloped in the roll of batting except a small opening at the mouth for respiration. It should then be placed by the side of the mother, if she is not too feeble, or on a pillow in a crib or on a chair near the fire where the temperature is about 90.° Later the wadding may be quilted into soft muslin or cotton cloth, making it about two inches thick. This may be made so wide as to fold over the child, and should be pinned all around with safety pins, except a small space opposite the mouth. In a case of triplets still-born between the seventh and eighth month, two of the infants were thus enveloped for weeks, while under ordinary care I am sure neither would have survived.

"What shall I feed such a little puny infant" is an anxious question. I have found that if a premature child is well oiled twice a day with Sweet Oil or Oil of Sweet Almonds, or lard without salt, they will usually sleep most of the time. We must not forget that the mucous membrane is also premature, and that it is in no condition to digest much casein, therefore the food should be oily. Cream diluted with three parts of sweetened water, is the best and most convenient diet until the mother's milk arrives. If the sugar is dis-

solved in the water first, a better solution is obtained. Sometimes these infants cannot nurse from lack of muscular power, but will swallow if the milk is squeezed into the mouth. At times the effort of suction and swallowing is so spasmodic that we will need to aid this operation by closing the mouth and lifting under the chin with the fingers. We must remember that all of the infant's first motions are in a measure, spasmodic. Children born at full term, often make spasmodic efforts at suction and deglutition at first, especially if they have been rendered nervous by colic, rough handling, bathing, hunger, etc. The premature infant does not require to be fed as often as if full time. Feed it when it cries for food, is the rule; still if it sleeps all the time and seems stupid and hard to rouse, it should be wakened to be fed as often as every three hours. If the mother is strong and the weather cold, the infant will thrive best if kept in bed with her. The moist heat from the body keeps up the normal temperature, and at the same time prevents the abstraction of moisture which is so liable to occur when the infant is placed near the fire; still if well oiled, this will be prevented in a great measure. Attention should be given that the extremities are kept warm. If inclined to be cold, the nurse or some kindly officiating neighbor should hold them in her hands, or they may be wrapped in the cotton separately, and a bottle filled with hot water placed near them. The temperature of the room should be kept above 80°, if the child is very feeble. If it gets chilled, colic is apt to distress both the child and

attendants. In case of colic, a little *warm sweetened water* will usually quiet it unless indigestion is also present, when the indicated remedy must be carefully selected. Chamomilla, Belladonna or Colocynth, have been the chief remedies I have found indicated. Great caution must be exercised that the child is not over-fed. The disorders to which the premature infant is most liable, aside from colic, are icterus neonatorum and eclampsia. These will be treated under their appropriate headings.

CARE OF MATURE INFANTS.

Having given the mother proper attention, the mature child should now be washed and dressed. It is usually found covered to a greater or less extent with a caseous substance which must be removed. Oil or lard is the best article to clean the child. If well oiled and wiped with a soft cloth, it will be clean without the use of water. If water must be used it should be blood warm, and only a portion of the child washed at a time, the rest being covered. The folds of the skin should receive the most attention. They should be wiped out clean, but it should be remembered that the child's skin is very delicate, and rubbing much will make it sore. If chafed, finely powdered starch should be applied to the raw surface.

The cord should now be dressed. If there is any oozing of blood it should be tied again, a little oozing does no harm, but severe bleeding should be prevented. The best dressing for the cord is two pieces of cotton batting

about the size of the hand. A piece placed beneath and another above the cord. It should be turned toward the left side. If turned toward the right it may cause colic by pressing upon the large liver. After being once dressed the cord should not be touched. It dries up and falls off about the seventh day. It should never be oiled for that often causes suppuration about the stump, giving us a very sore navel. When it falls off apply a piece of scorched linen to the sore. Anything wet or greasy should never be applied unless it becomes very much inflamed, then mutton tallow is the best dressing. It should be dressed twice a day, being first washed out with tepid water or Calendula water, then dried carefully, a little scorched flour sprinkled on, and then the mutton tallow dressing applied again.

CLOTHING NECESSARY.

After the cord is dressed, a light flannel band about four inches wide should be passed once about the infant and tied. This band should not be tight, especially over the stomach of a feeding child. Then the thin flannel shirt should be put on. The next article should be either a flannel skirt or a slip according to the weather. If cool both should be put on and when the child is taken up a shawl or pinning blanket added. Dressing and washing should always be performed in a warm room near the fire. A word about dress. This should be soft, loose and warm. Flannel is the best underdressing. The skirt should have a waist like a dress, but without sleeves. This and the dress should be loose.

In warm weather the infant should be very lightly dressed so as not to sweat much. Warm wrappings cause several diseases as we shall see. In winter it should be dressed very warm. "Dress according to the weather" is a good rule for all.

FIRST SLEEP AND FOOD.

The child after being dressed should be lain in a warm place and covered up snugly, all but a small place at the face for fresh air, when it will usually go to sleep and be quiet for several hours. If it seems restless cover it all over until it drops off to sleep and then uncover its face a little. Nature designs it to wait about two days before it gets food, or until the milk arrives and until the mucous membrane of the digestive organs get ready for their duty. The longer it goes without eating much for the first two days, the better, until the milk arrives. If very clamorous, as it may be if large and strong, it may be put to the breast. There is usually a little fluid there for it to get. It should not be allowed to tug at the nipple for that may make them sore. If managed gently, changed as soon as soiled, it can usually be soothed to sleep, and kept quiet until the milk comes.

CHAPTER IV.

MATERNAL FEEDING OF THE INFANT.

Although the mother may be able to nurse her child, still there are circumstances that render it imperative that she should not.

WHO SHOULD NURSE AND WHO SHOULD NOT.

Most mothers should nurse their children, but there are exceptions to this rule. 1. When constitutionally nervous, restless, and poor eaters and sleepers, they will give thin, poor, sour milk that will not nourish infants. 2. Consumptive women as a rule should not nurse their children. 3. Mothers with any wasting or contagious constitutional disease are in no condition to nurse children. 4. Mothers in deep grief should not nurse. 5. Mothers who flesh up rapidly while nursing, have as a rule, very poor milk.

MILK AND ITS CHANGES.

To understand why all mothers should not nurse, we must study milk, its origin and the causes that produce a free or scanty flow, and the remedies therefor.

Milk is an oil floating in a sweet liquid that holds several salts in solution. Milk is made up of water, fat or butter, casein or cheese, sugar and salts. The pro-

portions of each vary with the age of the milk. The first milk is made up of nearly all fat and water. The appearance of this milk as viewed by the microscope is well shown by figure 1. The large globules are masses of fat. This fat is necessary as the first food of the child as we shall see in the next chapter. This fatty first milk is called *colostrum*, and is present in the milk for about ten days, then it gradually lessens in quantity. This first milk is not only very fat, but also very sweet. This sweetness continues in excess for quite a time, and about the ninth month the salts increase in quantity until the milk becomes quite salty. The amount of cheese is small at first, but gradually increases. These are the natural changes the milk undergoes to meet the growing wants of the child, as we shall see.

EFFECTS OF TEMPERAMENTS ON MILK.

The temperaments have a marked influence on the milk. The plump brunette, bilious lymphatic, has the richest (fatty) milk. The pale, thin, nervo-sanguine mother has thin, watery milk, (Fig. 5.) In this temperament the first milk or colostrum is often very, very poor in fat globules, (Fig, 2.)' The bilious temperament has the sweetest milk, while the lymphatic temperament has the milk hardest to digest. It is watery and the globules are small and therefore hard to dissolve. (Fig. 4.) The purely nervous has a milk that sours easily. The action of acid on milk is to break the globules all down, (Fig. 6) and dissolve the sugar and some of the salts. A mixture of the temperaments change

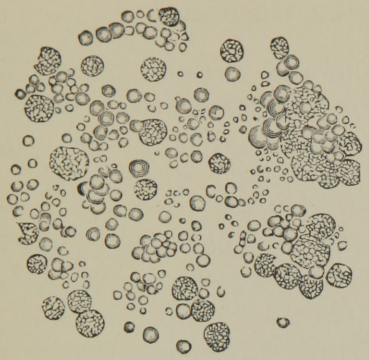


FIG. 1. Natural colostrum.

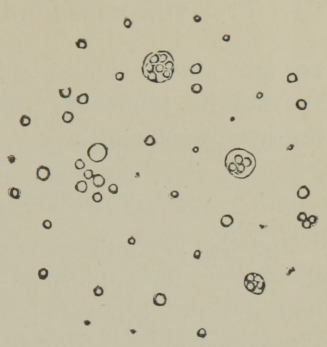


FIG. 2. Poor colostrum.

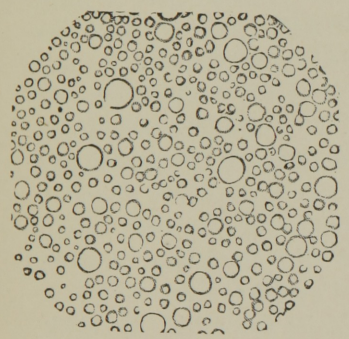


FIG. 3. Healthy human milk.

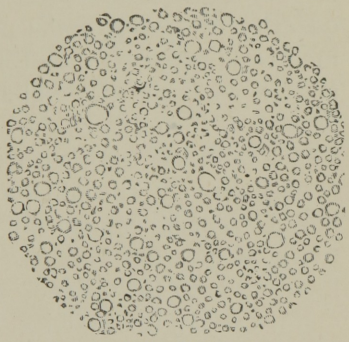


FIG. 4. Milk of fat woman.

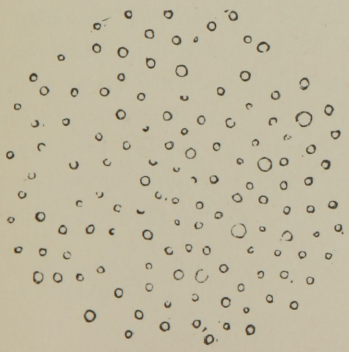


FIG. 5. Milk of lean woman.

FIG. 6. Milk affected by acid.

the milk, but it should be known that whatever may be the natural tendency, proper food can produce a milk needed for the child.

HABITS ON MILK.

The habits of the mother have a marked effect upon the milk. It is observed in Switzerland and America, that cows that have much exercise, "give but little butter, while the amount of cheese or curd is unusually large. These same cattle when stall-fed give a large quantity of butter, and very little cheese." Exercise increases respiration and robs the system of its oily matter, while rest, by diminishing this drain, favors the passage of the oil into the milk. The effect of activity on the milk will vary with the different temperaments. If with activity we add nervousness, the effect upon the milk is to make it poor and difficult of digestion. Inactivity is also deleterious. While moderate activity increases both the quantity and quality of the milk.

Hard work, like activity, lessens the fat in the milk, and mothers whose milk grows scanty while active, should give special attention to their food, or if the appetite wanes, the child better be fed entirely. Active mothers are tormented by the child wanting to nurse frequently. It does this for two reasons: first, because it does not get sufficient at a time to satisfy it, and second, the more frequent the milk is drawn the richer it is, being almost all "strippings," as the farmers call the last drawn.

EFFECTS OF FOOD ON MILK.

The food of the mother has the most marked effect upon the milk. Poorly fed mothers have very thin milk far below the normal standard. Cows fed on grass have richer milk than those fed on hay and grain. The effect of beets, a sweet juicy food, is well shown by Fig. 10. The milk globules are larger and look more like those in healthy human milk. When the food is watery, the milk will be watery, when rich and sweet the milk will be correspondingly affected. Sour food or articles that sour readily, lessen the quantity of milk, and shrink the globules. The kind of food needed is determined by the temperament and habits of the mother, and the requirements of the child. These will be carefully pointed out.

The best nurses are women of medium height and flesh, brunettes with soft delicate skin. Their milk is rich, fat and just liquid enough and of good quantity as well as quality. The poorest nurses are, according to my observation, the tall fair women, or large and fair. The milk is either scanty and of poor quality or very watery.

MILK OF FLESHY WOMEN.

The milk of fleshy women is usually watery, and the oil globules are numerous but very small. (Fig. 4.) They lack in fat and sugar. The darker the woman, as a rule, the sweeter will be the milk. A large fleshy woman of light complexion will have a poor, thin milk,

she will need rich sweet food to produce good healthy milk. Starchy food like bread, vegetables, cocoa-shell tea, or chocolate will improve this milk. Butter should be eaten freely by those whose milk lacks in fat. Oatmeal, meat and food that increase the casein or cheese of the milk should be avoided. Dilute and sweetened milk is a good drink for these nurses. Cold water between meals will help to improve the milk. Oily nuts and ripe sweet fruit may be taken to advantage by these mothers. The quantity of liquids taken should not be large, as these tend to fatten the mother rather than improve the milk. Exercise may be taken in moderation. This mother better walk and work than sleep in the daytime. A mother who fleshes up during nursing as a rule robs the child.

MILK OF SPARE WOMEN.

The milk of spare women will vary greatly whether light or dark. It is usually scanty in quantity and of a poor quality. The thin, light women have usually thin, poor milk. There are some thin, dark women of soft skin that are excellent nursers, the child thriving while she grows more thin every day. This may be prevented by proper food and care. The food needed by spare mothers consists of liquid fattening food to increase all the elements of the milk; e. g., soups, milk, gruels, oatmeal, warm water and milk. In the morning she should have a bowl of thin oatmeal gruel, the first thing as soon as she wakes. Then for breakfast she should eat hearty of baked potatoes, bread, butter, meat and coffee with

milk, well sweetened. In the middle of the forenoon another drink of thin gruel, and dinner between 12 and 1 P. M., should be hearty, with a cup of chocolate or milk and warm water, or cocoa-shell tea. Soup should be taken at this meal with very little pepper. In the middle of the afternoon a good drink of barley or rice water, then in the evening for tea, warm water and milk better be drank rather than tea, unless very weak, strong tea is both astringent and too stimulating; ripe sweet fruits may be partaken of at this meal. Acids or sour fruits should be taken sparingly by lean mothers. If the child nurses at night, a bowl of oatmeal gruel should be taken about midnight. If the mother is a blonde she should take much butter and other fatty food. This method of feeding will bring the milk of most thin mothers up to the normal standard. Special cases should consult her medical adviser as to the food needed, and the course of diet and treatment to be persued.

We have looked at the food question from the mother's side, but it is evident that the condition and needs of the child must decide just what the milk should be, and what the mother should live on. There is a natural standard of normal milk, but the child may be far from able to digest it. But it is pleasant to know that we are able to adapt the milk to the child, and thus supply its need, and at the same time help it to come up to the proper healthy, happy standard. This question of changing the milk by the food is one of the most interesting and practical that mothers can study.

CHAPTER V.

FOOD NEEDED BY DIFFERENT CHILDREN.

A problem that is often propounded, and one not often answered, and one of most vital importance is

WHY SHOULD THE CHILD WAIT THREE DAYS?

It is well known that the animals have milk as soon as the young are born, and sometimes before. In all of these cases the young are able to walk or "totter about" almost as soon as they come, but with a child it is quite different. It cannot walk, in fact is capable of very little physical exertion. Again we find that a great evaporation goes on in the child, but most of all, the mucous membrane of the mouth, stomach and intestines are not ready for digestion of food. It must undergo quite a developmental change before it is ready for duty. The injection and maturing of this membrane takes time. Some vigorous children seem born ready for digestion, but the majority must or should wait a little. Nature says wait two days at least. The mucous membrane becomes very red and injected during this time, and the food needed is an oily one. Fat aids absorption and digestion and is just the food needed by the water-soaked baby. Nature supplies in the colostrum or first milk just the oily emulsion needed to swell the cells, lubricate the mucous

surface and clear out the debris in the bowels called meconium.

It is a fact that all children cannot thrive on the same milk. The reason is that milk is a very variable article even in the breast, as we have seen. It varies with the mother and it varies with the food she takes, and it varies with the age. The first milk being so rich and sweet, is very easy of digestion, and the child grows rapidly during this time, then the milk changes. The oil diminishes rapidly while the casein increases, and now is the time when many babies are upset. Some think it to be due to the change in the mother's habits; she now gets up and takes part in the active interests of the house, frequently before she is able. But the change in the milk will take place anyway, and the question for us to decide is how radical shall this change be, and which does the child need most, fat or muscle? It should be known that casein or cheese makes muscle, but it should also be known that milk containing much casein is hard to digest. Then we must know the needs of the child and its digestive capacity. To decide this we must know whether it is

AN ACID OR AN ALKALINE CHILD.

In addition to the division of children into large and small, fair and dark, thin or fleshy, they may practically be divided into two grand classes, alkaline (fleshy) or acid (lean.) For ten years I have studied this division of children, and find it a very valuable one. This classification is not based on any external appearance, but

entirely upon the condition of the digestive organs. The saliva has an alkaline reaction, the gastric juice is acid, the bile is alkaline and so is the pancreatic and intestinal juices except in the large bowel near the rectum, where it becomes acid again. The food or milk should be acted upon by these different secretions to dissolve it, and when it reaches the bowels, to absorb readily, it should be alkaline. Alkalinity is necessary to life. Acidity means decay and death. If the food becomes acid in the bowels, digestion and absorption are interfered with, and the child is in great distress from colic therefore it is a very vital question whether the alkaline bile and pancreatic juice is able to neutralize the acidity generated in the stomach above. If the stomach is large and active, and the liver and pancreas small, the tendency is toward too much acidity in such a child, and its nutrition will be interfered with, and it will shew that it is being starved. There is too much destruction and not enough of repair. But if the liver is large and active so that the acid current is promptly neutralized, absorption is facilitated and the child grows rapidly and becomes well cushioned with fat.

The external evidences of an acid child are emaciation, it being frequently nothing but skin and bone, usually it has thin, red lips, hollow cheeks, sunken eyes and blue or pale extremities. In fine the child looks starved. The mucous membrane is red, highly injected and ready at the least provocation to take on inflammation, either of the stomach or intestines, or both, with all their serious consequences and complications.

This picture of an acid child should not be forgotten. An alkaline child is just the opposite of an acid one. It is plump and healthy looking. The lips are thick and pale in color, its cheeks are full and the abdomen and limbs rounded with fat. The mucous membrane of mouth, stomach and intestines is well developed and covered with mucus. Its digestive capacity is ample, and it is the picture of health. With these outlines any mother can tell to which class her child belongs.

FOOD NEEDED BY EACH.

The food adapted to the needs of these two classes will of necessity differ, because food is intended to supply the *needs* of the body. The acid child needs fat forming food, while the alkaline child needs more muscle and bone material. A child may be too fat and the muscular and bony system suffer in consequence. In infancy the acid child's food should be fatty for a longer time than would be necessary for the alkaline one. But should the change occur before its needs are supplied, oiling the child will supplement the food and hasten this acid infant to get over onto the healthy alkaline side.

We may know just what the child needs, and our next study is to find if that need is being supplied by the milk. Does the milk agree with its digestion, and supply its needs? We may judge closely by the appearance of the mother just what her milk will be. It may be examined carefully, and its exact character ascertained, then our work is to supply the lack by chang-

ing the mother's food. We may judge by what has been said of the appearance of the mother, of the nature of the milk.

The signs of milk agreeing will differ with the alkaline and acid child. The alkaline infant is not so easy upset and will endure greater changes than the acid child. "Spitting" is the mildest symptom of disagreeing in the alkaline child. "Wants to nurse frequently" and especially at night is another sign. Attacks of colic, vomiting and diarrhœa are sometimes met later as a result of indigestion in the alkaline child. The matter vomited or passed is usually slimy. In the acid infant the chief symptom of the milk not agreeing is colic. Instead of the child going to sleep quietly after nursing, it acts in distress and cries with colic. Sleeplessness, vomiting and diarrhœa are later symptoms. The food vomited will come up in curds, or passed giving a green and white chopped appearance to the stool. If the feeding is persisted in, it will have a sour, profuse perspiration, and an eruption of little vesicles, (See Skin Chart) about the neck, or all over.

Striking illustrations of this class of cases, are to be met with in almost every community, especially in the summer when the milk sours more readily than it does at any other time. Milk the least "turned" while it may not injure an alkaline child, will make an acid child violently ill. A thirsty child will want to nurse or feed when it should be given water. Frequent feeding of such children during hot weather, is sure to make them sick.

FEEDING HABITS OF EACH.

In the alkaline child the tendency is too frequent nursing, and the quality of the milk may be all right, but the excessive quantity alone be the cause of the trouble. In such a child there is trouble with its stomach. (See Gastric Catarrh.) An alkaline child is a hearty feeder and should go longer before it feeds again, especially at night.

With the acid child there is a tendency to gorge, to keep it quiet. This simply makes matters worse. It should be nursed oftener than the alkaline child, but in smaller quantities. If it has colic this should be carefully studied and treated. (See Diseases of the Stomach.) It needs rich food and the most careful management to get it up to the healthy standard. The mother's milk should be rendered sweet, rich, and most easy of digestion, so as to rapidly fat the acid child up. It needs to be kept warm and should not be bathed often. Soap should be used sparingly, for that dissolves out the fat, and this child has none to spare. It is this class of children that suffer so much, and die so easily and in such large numbers.

If the mother is thin and gives impoverished milk that readily sours, the child should not nurse after the first two weeks, but should be put on a food adapted to its needs.

Again if too fat, and the milk is scanty and hard to digest, and cannot be adapted to the child's needs, then it should be fed or wet-nursed.

HOW TO INCREASE THE MILK SUPPLY.

When the milk is scanty, it may be increased by applying oil to the breasts. Caraway seeds increase the milk of cows and it will do the same for the mother. Oil taken increases the flow of milk. Agnus castus was a popular remedy in the Orient. Asafœtida has a similar reputation even when the milk has entirely disappeared. Other remedies have a marked effect upon the secretion of milk, and may so improve it that little feeding will be needed. The following indications for the use of these remedies are quoted from the author's large work:

"A deficient secretion or the voluntary *vanishing* of the milk is sometimes remedied by Pulsatilla or Calcarea. If the secretion is suddenly suppressed by fright, Aconite or Ignatia restores it. If by a fit of anger or vexation, by Bryonia or Chamomilla. After a *cold*, by Pulsatilla, Aconite or Dulcamara. If the milk is *bad* so that the infant refuses to take it, Mercurius, Cina or Silicea often correct this defect; and if too *thin*, so that the child does not gain by it, China, Mercurius, or Sulphur. If the milk *coagulates* too readily, Borax, Lachesis, and if it *sours* too easily, Rheum or Pulsatilla. If the breasts are turgid with milk and the milk does not run out, Bryonia or Belladonna and sometimes Aconite or Chamomilla will help; for a constant *involuntary* flow of milk, Belladonna, Calcarea or Bryonia, and very often China or Pulsatilla are the best remedies." A dose once in three hours.

These or other remedies may be given to the infant and improve its digestion. In this way we may change an acid child into a healthy alkaline one.

CHAPTER VI.

PROFESSIONAL WET NURSES.

When the child cannot be nursed by the mother, or her milk does not or cannot be made to agree with it, and artificial feeding cannot be thought of, then comes

THE CHOICE OF A WET NURSE.

Frequently there is no opportunity for a selection, there may be only one rather than a choice. In the large cities, however, an advertisement may bring half a dozen applicants, especially if the wages are good. Now the choice rests solely upon the needs of the child. If we can find a plump brunette, her milk will be apt to agree. Remembering that the microscope decides the appearance of the milk, the friends should if possible submit the whole case to the medical adviser for most careful examination and selection. If we remember what has been said about the influence of temperament, we can form a very accurate opinion of both the quantity and quality of the milk of the proposed wet-nurse. In this selection there are many things besides the milk alone that must be considered prominent, among these are

PERSONAL APPEARANCE, HEALTH, AND TEMPER.

Excessive neatness is not to be expected, for that is often accompanied with nervousness that does not im-

prove the milk. Slovenly habits should act as a barrier, for that is often associated with disease. It is best to visit the nurse at her home, then we can better decide as to her personal habits.

Her health, however, is the most important. Here we should depend largely upon what we see. The skin and especially the breasts and nipples should be smooth and without roughness or cracks. The tongue should be clean and moist, indicating good digestion. The eye should neither be brilliant nor dull. The former goes with nervousness or consumption, and the latter with sluggish apathy. Temper poisons the milk and a nurse that flies angry or pouts will jeopardize the health if not the life of the child.

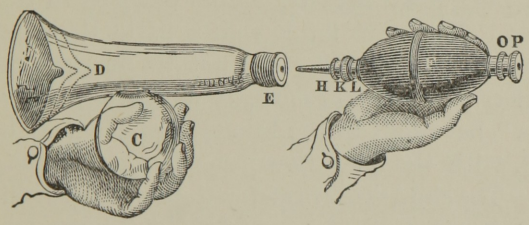
The age of the milk as well as the age of the nurse should be taken into account. The age of the milk will vary much, as we have seen, with the temperament. The younger the woman, as a rule, the richer the milk, but it often lacks in the salts — a lack, however, that may be supplied by proper food.

THE APPEARANCE OF THE BREASTS, NIPPLES AND MILK should be carefully noted. The size of the breasts vary much with the fat. If fleshy, she will have large breasts; if spare, small ones. The milk glands, however, will decide the milk capacity. If these are hard like knotted veins all around, the capacity will be ample.

The nipples should be perfect and stand out well and have rounded ends. If retracted they will bother the

child to nurse them, also if large and short. If too long, there is not much milk present, except in those who have had many children. Long nipples usually go with those who have nursed for a time.

The quantity and character of the milk is the most important question. The breasts should be emptied with a breast pump. This will decide the question of quantity. From a half to a gill should be obtained from each breast. It should be borne in mind, however, that a child will get more than can be pumped out. The milk should draw easily.



If it draws hard and the child weak, it may starve at the breast because not able to use the necessary suction. It may start hard and then flow easier. The nurse can facilitate the flow by squeezing the breast. If it flows too easily the child may over-eat. In such cases the milk may be retarded with the fingers.

To determine the quantity of the milk, it is best to pump it out before any examination is made, and set it aside. The examination will take some time, perhaps an hour, then before she goes the milk may be drawn again. If we do not get much we can form an idea of

about the quantity. The milk should be forming and filling gradually, but in some cases it seems to run all in at the time the child is applied. In such cases the milk is usually scanty.

To determine the quality, examine the first milk drawn, the last drawn, and that drawn the second time. The appearance should correspond with that shown in Fig. 3 on page 63. It should be sweet to the taste, with just the faintest idea of saltiness.

STARVED CHILD UPSET BY GORGED BREASTS.

When a nurse is selected do not allow the child to empty the gorged breasts. Pump out part of the milk at least. Better to let it wait a little than get this stagnant, feverish milk. Do not let it nurse often at first, if very weak. Frequently mothers with "caked breasts" have sent to the Foundlings' Home to borrow a child, with the plea that "she has milk enough for two." The child was gorged with this feverish milk and the result has always been that the child was made ill, some living but a short time. So constant was this the rule that now no babies are thus loaned out. A wet nurse of little judgment may thoughtlessly nurse her little charge too often, to keep it quiet. After over-eating the child may sleep for four or five hours. This should occasion alarm, for it means illness. The child should be waked at the third or fourth hour and changed and held awhile, keeping it awake, then it may sleep again. Before it nurses again the breasts should be partially emptied.

CHANGE OF HABITS WILL CHANGE MILK.

It is frequently the case that a nurse used to common food is taken to nurse a child of a well-to-do family, fed on dainties, confined to the nursery and closely watched by anxious friends, when all are surprised to find that her milk now disagrees with the baby. This change in her habits of life has spoiled her milk. If the nurse, and mother, is sensible she will follow the example of Daniel and live on her former food, even if it is only "praties and milk." Exercise is necessary and sometimes all that is needed to bring back the milk to its old standard is exercise out of doors and light housework. A sensible mother will not tell a nurse that all she has to do is "just to nurse baby." She should understand that she must help some, or her milk will dry up. Exercise she must have.

Another thing she should understand that she must live on the food that agrees with her. The food and drink already given for the nursing mother will be best also for the nurse, if any change is needed. A nurse who "enjoys" tea and coffee will soon have a nervous child. When she calls for porter, beer, and other stimulants to "make milk," it is time to look for another nurse. Alcohol changes the albumen of the milk and does not improve it. The valuable articles in these drinks is the water, gum and sweetening, and these can easily be obtained in less harmful shape. Slight indispositions of the nurse may derange the milk.

THE TIMES FOR NURSING.

It is very necessary to regulate the times of nursing to once in two to three hours in the day and only once at night. The child should not sleep with the nurse at night, and if possible it should sleep all night without nursing. Under no circumstances should the child be permitted to lay at the breast all night. It is best for it to sleep near the mother and be taken to the nurse. Frequently it wakes because it is soiled rather than because it is hungry. It should be remembered that no one learns habits quicker than a child. It may take a few nights to get along without nursing at night, but a little perseverance will soon get it into regular habits. As soon as it is three to six months old it should be fed once a day about 9 A. M. or 1 P. M. This should take the place of nursing at that time. It should not be allowed to nurse right after feeding, as that is a bad habit, teaching it to depend more and more on the breast, rather than the opposite which is the object of feeding it. The mother should see to the feeding that the food is uniform, and given at the same hour and temperature and in the same quantity.

CHANGES OF NURSES OFTEN BEST.

Instead of attempting to control an obstinate nurse better make a change. The older the baby the easier and safer can changes be made. The very fact that a change may be made has a good effect upon the succeeding nurse. In the second change the age and pres-

ent needs of the child should again decide the choice and the same care should be taken in the selection. It is well that the first nurse be not aware of the proposed change, for her anger or grief may seriously effect the milk. A week's notice is not best here, although she should have some intimation that a change may be made.

EXPEDIENTS RESORTED TO KEEP THEIR PLACES.

A nurse aware that a change may be made, and she may resort to various expedients to keep her place. She may feed the child when alone sufficient to satisfy it and supplement her scanty poor milk. She may resort to soothing mixtures to keep the child quiet. If the mother cares for the child at night, and is as attentive during the day as a loving mother should be, she will readily detect these "tricks." If the nurse is allowed stimulants she may take them in such excess as to stupefy the child, and it may be so quiet but so drunk that it cannot make its wants known. These are but a few of the expedients resorted to by some professional wet nurses to keep their places. Wages, from five to ten dollars a week, are a strong temptation to some nurses to keep their milk for years. Such a nurse has always "just lost her baby" when she goes to a new place. A careful microscopic examination of the milk should always be made before a new wet-nurse is engaged. There are honorable exceptions among wet-nurses we know, but we have observed that one experience with a wet-nurse has usually been all suf-

cient, still for "baby's sake" who would not endure much inconvenience?

WHEN TO WEAN A WET-NURSED CHILD.

Such babies are frequently weaned early, more to get rid of the nurse than because it is deemed best for the child. If it gets to feed two, three, or more times a day, and the food agrees, it can be weaned easily and more early than if no such necessity arises. The danger of weaning is often magnified, especially in the summer months. It is my observation and experience that there is no more danger in weaning a child, than in allowing it to nurse when the milk does not agree, or is subject to the whims and fancies of an obstinate or capricious nurse.

CHAPTER VII.

ARTIFICIAL FEEDING OF INFANTS.

There is a foolish dread of feeding a nursing infant, even although the mother is well satisfied that her child does not get enough of milk to nourish it. I am quite convinced that

MANY INFANTS ARE STARVED AT THE BREAST.

A medical friend thinks that few American women are able to nurse their babies. There are two classes of children that should be fed. 1st. Those that are starving at the breast, and those that are growing too fast, fattening up too rapidly. It may surprise some to think that these latter children, that have enough, should be fed, but children of vigorous appetite and ample digestion will suffer most severely if their milk supply should be deranged. In these cases the mother usually grows very thin, and under such circumstances her health should be conserved by feeding her infant and thus give her a chance to recruit. A child that is too fat has, as a rule, deficient muscular food. Under such circumstances the fatter children get the feebler they will be. They need muscle-food and this lack of the milk should be supplied, if the mother's milk cannot be improved so as to meet their need.

But the infants that imperatively demand feeding are those that are not thriving properly. A healthy

child will thrive even when teething, if there is no apparent disease, and even if there is, the child possibly needs more food than it is getting. When the child is not satisfied, does not thrive, acts hungry, yes and long before the mother should settle the question whether her milk is sufficient and not starve her child. This she may know, not by the quantity of the milk but from the behavior of the child. Does it nurse steadily and in a satisfied manner or does it soon empty one breast and then the other and still worry, or does it drop to sleep almost as soon as it begins to nurse; if so the mother may rest assured that the child does not get sufficient. Does the child seem better satisfied after the mother has taken a meal? Is the mother's appetite good? Are her breasts full and hard before the time for nursing? If she is satisfied that she has not enough, then the question arises what shall the supplemental food be. If her milk is plenty but thin, the child will not thrive.

If the mother has an abundance of good rich milk, and the child is thriving on it, even under these favorable and satisfactory circumstances it is best for the child to learn to feed. I do not refer to a bit of bread, a piece of meat, or anything far beyond its digestive capacity. This is a pernicious habit and one that has raised the strong objection to feeding children anything while at the breast. But of this more anon.

THE BEST FOOD WHEN PARTIALLY NURSED.

One of the best mothers I know, and to whom I am indebted for many practical hints, always began to feed her babies when quite young, although she had plenty of good rich milk. The food she gave them was a teaspoonful of fresh cream diluted with eight teaspoonfuls of boiling water, into which she had dissolved a teaspoonful of loaf sugar. This she fed once a day, and it served as a meal. They soon got to like it, and in case of her occasional absence they done nicely. She said she did not feel tied to her babies, and did not get anxious for fear they would suffer if she got ill. This relief of mind is what many a mother needs. This cream food is perhaps the best early food for babies unless the mother's milk is very rich and sweet, then the top of the milk better be taken instead of the cream. After the milk stands a couple of hours take off the top third of the milk. To half a cup of this milk add as much boiling water, into which has been dissolved a heaping teaspoonful of sugar of milk.

Sugar of milk is to be preferred to loaf sugar or any form of cane sugar as sweetening, for the reason that it needs to undergo no change to be absorbed, it is animal sugar, or in other words, vitalized. It also contains phosphates and other salts that the milk often lacks. It is extensively used by Homœopaths who select the pure article. Care should be exercised that this sugar obtained is pure. It is often adulterated with starch, white earth, etc.

If good milk cannot be obtained then condensed milk may be used. It should be known that this milk is not only condensed, but to it is added about one third of its weight of sugar. This milk should be well diluted with from twenty to thirty parts of warm water, according to the age of the child. The younger and feebler the child, the more water should be added.

Sometimes it is found that two milks do not agree, then the question arises, what shall we next feed it. The choice will be among the more simple forms of artificial food.

The habit of feeding soaked bread or cracker to an infant is productive of much trouble. The digestive powers are not able for so much starchy food. If a soda cracker is well baked in the oven then covered with boiling water, and sweetened with sugar of milk, some of this water, to which one-third milk has been added, may be given without detriment to the infant. It is well to give this only every other day at first until the system gets used to it, then every day.

Arrowroot, cornstarch, sago, rice flour, and many of these mild starches are given and agree with infants. They must be well cooked in water to which a pinch of salt is added, and when well done and very thin, as much cream, or two-thirds as much "top of the milk" added and fed to the child once a day. The effect of this food should be closely watched. If it disturbs the child in any way, do not persist with it, but wait a few days and then try a food more easy to digest. Frequent movements of a greenish cast or flatulence, indicate that

it is the starch that is not cooked or digested. If lumpy it is the milk that disagrees. In the latter case the food may be given without milk, only a little pure sweet cream being added. If the cream disagrees it will be vomited, or else cause simple loose passages.

One of the reasons why artificial foods do not agree with infants is because the mothers or attendants persist in giving something stronger and in a large quantity. A small quantity of mild food should be given at first. As the child grows older it may be given stronger food.

Barley flour well cooked with water so that it will be thin, and to this a little milk or cream may be added, will make a most easily assimulated food. This is adapted for infants from three to six months old. It often acts nicely where the bowels are inclined to be loose.

Oatmeal soaked all night and strained and the water cooked for an hour or more, forms an excellent food during teething period, and supplements the mother's milk to good advantage. If the child is constipated, it is especially valuable. It may be given in milk or cream, and should be sweetened with sugar of milk.

A graham gem sweetened, or a soda cracker may be given the child to nibble at when it has some teeth.

From the sixth to the ninth month or a year, it may be fed from two to four times a day, as the food agrees. Avoid feeding it in the evening or at night unless it be a drink of diluted milk and water in the night. No harm can result from feeding a nursing infant if due caution is exercised.

A CAREFUL NURSE BETTER THAN A POOR BREAST.

The point that occasions me anxiety when a child is to be fed is this: Is the nurse a careful, thoughtful one. A careless mother will be apt to make her child sick even at the breast. Many a child is rendered sick by its attendant being thoughtless. How often have I heard the expression: "I might have known better, but I did not think." There is an intelligent, watchful habit of mind that all those who have the care of infants should cultivate. It only takes a few days of this sort of drill until the person thinks twice before any action is taken, or as it were by intuition or forethought. If the mother cannot thus school herself she better get some one who can. The child does not need constant watching nor fussy attention, for both will make it or anyone else, nervous. But it should have its needs anticipated and supplied or satisfied in the most direct and sensible manner, *e. g.*, its food should be cooking so as to be ready at the time it should awake. The food should be well cooked rather than half cooked, and fed "to stop its mouth." Another point of watchfulness with a fed child, and that is the feeding apparatus. This should be instantly washed in soda water, and put in a pan of water when not in use. Food should not be in it a moment *before* it is needed. A careful nurse will not use a damp or soiled and redried diaper. Fresh, clean, dry linen the child needs. Another thing, she will wash it rapidly a portion at a time, and not unduly expose it, nor scrub the skin off

with soap. (See Frequent Washings.) Above all she will not make the least change in its food, because she fancies it must be tired of it. A child that lives for months exclusively on a milk diet is evidently not capricious.

FOOD TO SUPPLY THE LACK IN BREAST MILK.

How to select a food that will supply the lack in the breast milk is not always an easy task. There is no rule that will apply to all cases. A mother may insist it should be fed a certain food because her infant did nicely on it. No sensible mother, after reading what has been said about the milk of different mothers and the difference in children, will listen to that sort of reasoning. It is easy to follow some one's advice rather than work out the problem alone. Is it not strange that every old lady will insist on the mother taking her advice? Now we must know just the lack to be supplied. To ascertain that we must study the child. If the child is in distress after nursing it is due to either of two causes: 1st, to milk souring too readily, or 2d, to milk hard to digest. If these causes are severe or long lasting, the milk will be vomited, either very sour or curdled in large curds. All food that has been in the stomach, some time will be sour when vomited, unless the digestive organs are very weak. In case of the milk being very sour, the stools will be thin and acrid — making the child's seat sore. If the milk is hard to digest, it will be passed in curds or be lumpy and yellow, and finally green, watery and lumpy. The

more yellow in the stool, the better digested it is.

In the large majority of cases the milk of the mother either sours too easily or is too hard to digest, because there is too much casein in it. If the milk is too fat as it may be in a very thin mother, and when the child nurses frequently the stools will have an oily, slimy look. In this latter case diluted cow's milk will usually supply the lack. But when it sours readily or is too curdy, then neither milk nor cream may be digested. Then we may try the following:

One tablespoonful of fresh cream, two tablespoonfuls of whey, two tablespoonfuls of hot water (not boiling, but which has been boiled.)

The whey is made fresh in the house by adding one teaspoonful of prepared rennet to a pint of new milk, well warmed; after mixing well, allow it to stand until the curd forms; this is removed by straining through muslin. (A piece of fresh rennet an inch square may be soaked in half a glass of water, and a teaspoonful of the liquid used instead of the prepared rennet.) If the child belches sour water consult your physician. For in that case the milk does not agree and the food should be changed to a starchy or prepared food. To ascertain the lack, and the food to supply it, a skillful physician should be consulted. The points that demand attention are the temperament of the mother and her food, and the class to which the child belongs as well as its age. Frequently I receive letters asking what they shall feed their children on, in addition to the breast milk. In such cases it is difficult to decide unless I

know whether the mother is light or dark, large or small, fleshy or thin, what she lives on and her habits of life, also whether her child is light or dark, acid or alkaline, as well as its age. How the breast milk or food already given seems to disagree, should always be given. These facts the physician must have before he can decide just what is needed.

UNNECESSARY DREAD OF WEANING IN SUMMER.

Many a child is starved at the breast, so that when it gets sick it is an easy prey to disease, because the mother dreads to wean it in the early summer. Perhaps it is just nine months old and has only four teeth, and she is so afraid it will get sick during the coming hot months. To the question, do you have plenty of milk? comes the answer frequently, "Not a great deal." How is your appetite? "Nothing extra, not as good as it was before house-cleaning." (House-cleaning is the great event that robs many a mother of what surplus strength she picked up during the winter.) With little appetite and less milk, many a growing child is nursed into the summer and sickness and death, just because the mother feared to feed it partially or wholly. Very often when called to a sick child over nine months old, that is nursing a poor breast, one of the first things I do is to order it fed, selecting the food adapted to the needs of the case. If the nursing is positively harmful, indicated by vomiting or distress after nursing, then I wean the child and select the food needed. Under such adverse circumstances even, most of the

children begin to thrive at once. I would just as soon treat a fed, as a nursed child in summer. If a child must be fed, hot weather is no objection. I prefer a sensible, careful nurse to a poor breast, and a fed child to one subject to the changes that the nursing mother must undergo during the sultry days of summer.

CHOICE OF MILK.

The food needed by the child that is not nursed will vary greatly with the age of the digestive organs, therefore the choice of milk must be decided by them.

Milk is the food for the infant, but we have seen that there is a great variety of milk even in the human breast. The milk is but an exponent of the food taken. When the new-born infant must be fed then the milk should be selected from a cow whose calf is as near its own age as possible. If the child needs fat food then the calf may be younger than the child to advantage. If the child needs sweet food then the cow should be dark. If it needs fat food as well, then she should have a soft, dark hide.

For the first three months it should have, if possible, milk from one cow, if it is feeble, but a strong child can stand milk from a number of cows. When the cream or top of the milk only is used, it does not matter so much about the number of cows' milk that is used. It is well to avoid very rich milk like that of Jersey cows, which has a very thick, rich cream. In those cases the milk should be used soon after it is drawn.

The spring of the year is the best time to put the child on milk, first, because the milk is more easy to digest then, and second, because the child's digestive organs are then at their best. It should be remembered that milk from grass fed cows is richer than that from hay or slop fed cows, and we may expect diarrhœa from the excess of fat. Milk is harder to digest during the hot days of summer, when the grazing becomes dried up. Now bran slops or green stalks of corn should be fed the cow that is supplying the baby with its milk.

ANIMAL AND HUMAN MILK COMPARED.

We have seen what human milk is composed of, that it is made up of water, oil or butter, casein or cheese, sugar and salts. We find the same ingredients in cow's milk, only in a little different proportion.

Haidlen, (Annalen du Chemie und Pharmacie, XIV., 263), from an analysis of cow's milk in the fresh state, deduces the following statement of its composition in 1,000 parts, which we compare with the chemical composition of human milk, as compiled by M. Robin:

	Cow's Milk.	Human Milk, (Robin.)
Water	873.00	.921.717 to 863.149
Milk-sugar	43.90 (lactine or lactose)	37.000 " 49.000
Albumen		traces " .880
Casein	48.20	29.000 " 39.000
Lactopeptine		1.000 " 2.770
Butter	30.00 (margarine)	17.000 " 25.940
Oliene		7.500 " 11.400
Butyrin, etc.		.500 " .700
Lactate of soda		.420 " 1.830
Calcium phosphate	2.31	2.310 " 3.440
Magnesium	0.42	.420 " .640

Sodium		.525 "	.250
Iron	0.07	.032 "	.070
Potassium chloride	1.44	1.440 "	1.830
Sodium chloride	0.24	.240 "	.340
Sodium sulphate		.074 "	.075
Sodium, in combination with casein	0.42		
Calcium carbonate		.069 "	.070
Sodium carbonate		.053 "	.056

It will be noticed that cow's milk contains less water and sugar and more butter and much more casein. The salts of each are about the same. There is also free lactic acid in cow's milk which gives it a slightly acid or neutral taste. This is one of the most objectionable features of cow's milk, as healthy human milk is alkaline. Cow's milk also contains much sulphuretted hydrogen gas which is given off after standing. The amount of the gas varies greatly with the clean or filthy habits of the animal giving the milk. Cleanliness very much improves cow's milk for the use of infants. There are other facts too elaborate and scientific to be given here, but may be found in the author's large work.

The microscopic appearance of animal milk is well given in the accompanying illustrations. The colostrum (Fig. 7) is seen as large masses of fat and the globules have thicker walls (Fig. 8) which accounts for the extra amount of casein. In cow's milk the globules are also much smaller than those of the human milk. The picture is not exactly accurate on this point. The first portion of cow's milk is very watery, as seen by Fig. 9. So if an infant is fed with this part of the milk it would starve. Fig. 10 shows how cow's milk may be improved by food.

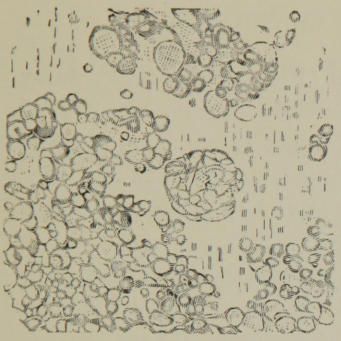


FIG. 7. Cow's colostrum.

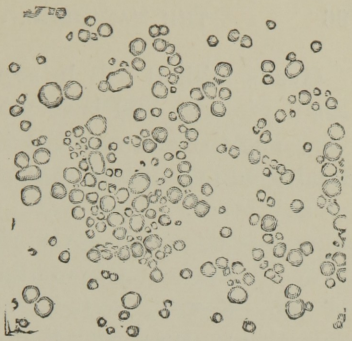


FIG. 8. Average cow's milk.

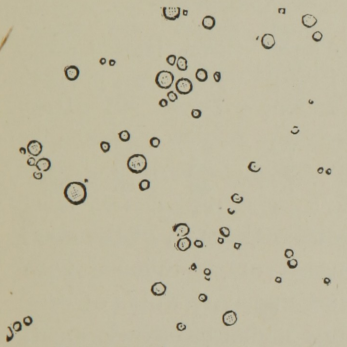


FIG. 9. First portion of milk.

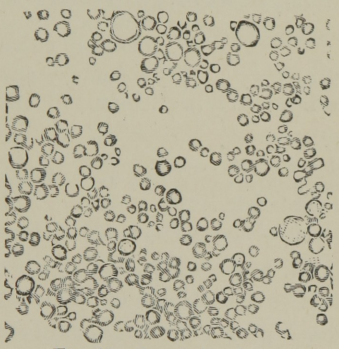


FIG. 10. Cow fed on beets.

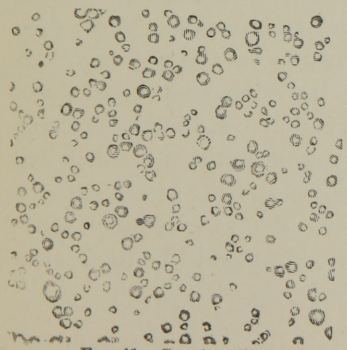


FIG. 11. Goat's milk.

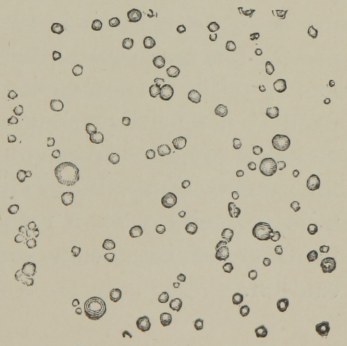


FIG. 12. Ass's milk.

Goat's milk it will be seen (Fig. 11) contains many small globules and is very hard to digest. It proved very unsatisfactory at the Foundling's Home, but the food would doubtless change this milk as it will that of any other. Asses milk (Fig. 12) looks more like human milk except not so rich in fat.

The following table exhibits the average proportions of the different ingredients, in the milk of various animals compared with that of woman. These proportions, however, are liable to wide variations.

	Woman. (*Simon.*)	Cow. (*Simon.*)	Goat. (*Chevalier.*)	Sheep. (*Chevalier.*)	Ass. (*Simon.*)	Mare. (*Luiscuius.*)
Water	890	860	868	865	907	888
Solids	110	140	132	144	95	112
Butter	25	38	33	42	12	12
Casein	35	68	40	45	16	16
Sugar and extractive	48	30	53	50	65	88
Fixed Salts	2	6	6	7	—	—

It appears from this, that whilst the milk of the cow, goat and sheep have a general correspondence with each other, those of the ass and mare are fluids of very dissimilar character, containing a comparatively small proportion of casein and still less butter, but abounding in sugar, hence it is that they are much more disposed to ferment than other milk; indeed the sugar in mare's milk is so abundant that the Tartars prepare from it a spirituous liquor called "Koumiss." This article is prepared from cow's milk and is recommended for summer complaint of children. Like sweet buttermilk, or milk with a drop or two of alcohol, it may prove of service in some cases, but should be used with caution.

HOW MILK IS DIGESTED.

It is interesting and profitable to understand something of the changes that milk undergoes, and how it is absorbed into the system.

As milk is taken by the infant it undergoes little change until it reaches the stomach. There is little or no saliva to change it, although there may be some mucus mixed with it. On its way to the stomach some of the watery portion is absorbed. In the stomach it is acted on by an acid fluid composed chiefly of lactic and hydro-chloric acids. These dissolve the casein walls of the fat globules, and change the sugar of the milk into lactic acid. These two changes tend to break the milk up into fine curds and an oily emulsion. More of the liquid portion is absorbed as it passes out of the stomach and into the upper part of the smaller intestines where the milky current is called chyme. It now meets a large stream coming out from the liver and pancreas that acts upon the oil and curdy casein breaking the oil up into still finer globules which become surrounded with the broken up casein. It is now a very fine emulsion and is called chyle, and in that condition is absorbed by the lacteals and passed on through the lymphatic glands into the blood in the shape of lymph or white blood corpuscles. In the blood vessels these white corpuscles absorb coloring matter and become red blood. This in brief is how milk is digested and blood is manufactured. It will be seen that milk undergoes very little change.

HOW TO MAKE ANIMAL MILK LIKE HUMAN.

To understand how to change animal milk so that it will correspond to human milk we recall their difference. Cow's milk contains less water and sugar and more fat and casein. These two last are the hardest parts to digest, as we have seen. The casein is really the last of all to be ready to be absorbed and must be acted upon by three or four fluids — about half a dozen different agents — before it is broken down. It is the casein that makes the milk globules small and their walls thick. The thicker the walls of the globules of milk the harder it is to digest.

The free lactic acid must be got rid of as well as the sulphuretted hydrogen. If it stands a time in a clean cool place the latter escapes. If it is heated, however, more is driven off and with it some of the free acid. This acid tends to break down the sugar in the milk and soon sours it. So the sooner milk to be given to a child is heated after milking the better. The free albumen and sugar is taken up by the globules which render such milk easier of digestion. Now if it stands a little and the top third of the milk taken, we have less water, more large fat globules and less small ones therefore less casein. Now if it is heated and water and sugar of milk added, we have a fluid that corresponds closely to mother's milk. Shaking it for a few times will add oxygen to it that will facilitate its absorption. The quantity of water and milk to be added will of course vary with the milk. If the cow is fed

on grass or slops, less water need be added. The looser the child's bowels the less water will be needed. The longer the milk has stood the more water will be needed. The acid child will need more water to its milk than the alkaline one. So it will be seen that it is impossible to give very definite directions.

To make cow's milk similar to human milk various directions are given in the author's large book.

Dr. Ruddock advises "one drachm of sugar of milk dissolved in three-quarters of a pint of boiling water, and mixed, as wanted, with an equal quantity of good new cow's milk."

Dr. T. D. Williams, chemist, directs: "One teaspoonful of sugar of milk (German) dissolved in two or three tablespoonfuls of boiling water, to which add a half pint of city milk."

Prof. Pavy says: "A solution of sugar, or what is more in conformity with the natural state, sugar of milk, in the proportion of an ounce to three-quarters of a pint of water, may be used, and at first mixed to the extent of about one-third of this solution with two-thirds of milk. Later on, the quantity of the diluent may be somewhat diminished." Food and Dietetics, p. 495.

Prof. Smith, Diseases of Children, says: "For infants under the age of three months, cow's milk of ordinary richness should be diluted with an equal quantity of water or thin barley water."

M. Donne, a prominent French author, prefers the first milking when it can be obtained, as this contains

a smaller proportion of the solid elements than the average milk and requires but little dilution. But we have seen that it is of little value. (Fig. 9, page 95.)

Many prefer the part of the milk containing more cream, *i. e.*, the last drawn. Others prefer "the top of the milk." Milk as fresh as possible, is allowed to stand two or three hours, and then the upper third of it removed for use. To one part of this, two, or even three parts of warm water or barley water, holding a little sugar of milk in solution, should be added.

Prof. Steiner, Diseases of Children, says: "At first cow's milk should be diluted with one-third of water, in the second month only a fourth of water need be added, and after the fourth month pure milk may be given warm through a feeding bottle."

Sebert says: "I must declare as an abuse the dilution of milk for infants, usually with equal parts of water, or sugar and water. Cow's milk only contains 3 per cent. more of solid constituents than woman's milk. (There is over 27 per cent. more, as will be seen on page 96.) A slight dilution with water would be advantageous, but the child easily digests cow's milk even when pure, provided it is of good quality, and comes from an animal equally well-fed. In the beginning the child is sooner satisfied, and takes somewhat less; at a later period it is equal to relatively larger quantities."

For twenty years Dr. T. Moore has directed in case human milk cannot be obtained proper for the child, to dissolve a heaping teaspoonful of sugar of milk, in half a teacup of boiling water and then add an equal quan-

tity of fresh unskimmed cow's milk. If the casein is then not thoroughly digested, but is vomited or passed in hard white lumps, the addition of a solution of a little pulverized Gum Arabic to the mixture, will prevent the coagulation of the casein and ensure its more complete digestion. This he gives to the child before dentition, to supplement the mother's milk when scanty.

Prolactea is a preparation of sugar of milk and lime salts that is to be added to the milk to make it like mother's milk. Physicians who have used it speak very highly of it.

The amount of dilution will vary with different children. The child of a fleshy blonde will need milk less diluted than the child of a dark person. If the milk is acid in reaction, a little Bi-carbonate of Soda may be added, if the child lives inland, but if on the sea coast Carbonate of Potash will aid its digestion better.

CONDENSED MILK.

In cities where pure fresh cow's milk cannot be obtained, condensed milk is used largely and especially during the hot months. The milk from the rich pastures of Switzerland, Bavaria, Ireland, England and America, have been preserved by adding to it a third of its weight of sugar, and then concentrating it in vacuo until it acquires the consistency of thin honey. In this state it is run into tins, which are immediately soldered down and thus hermetically sealed.

COMPOSITION OF SAMPLES OF CONDENSED MILK.

	Anglo Swiss.	*Viris Swiss.*	*Sassin Swiss.*	*Kempton Bivaria.*	*Ordinary Milk.*
Casein	18.10	15.96	14.24	14.90	3.64
Butter	12.26	12.03	12.63	13.65	3.55
Sugar	44.25	46.92	51.83	50.21	4.70
Salts	2.41	2.67	2.48	2.43	0.81
TOTAL SOLIDS	77.02	77.58	81.18	81.19	12.70
Water	22.98	22.42	18.82	18.81	87.30
	100.00	100.00	100.00	100.00	100.00

We see that the concentration of the milk has been to about one-fifth of its original bulk, in addition to the extra sugar, and therefore if it be diluted with ten or twelve times its bulk of water, it will make a good milk of ordinary strength. Of the sugar in the milk from fourteen to eighteen parts consists of lactose or milk sugar, and the rest is cane sugar—hence the sweetness of the milk. To render this milk similar to breast milk it is necessary to add from twenty to thirty parts of water according to the age and digestive energy of the child. The chief objection to this milk is its sweetness, and children who are made sick by sweet-food (and especially if the mother dislikes sweets) cannot tolerate it. Under such circumstances when there is more sugar than is necessary to digest the casein, and the child has colic and eruptions, a little more casein may be added by gradually mixing small quantities of cow's milk with it. Oatmeal gruel may be added instead, when the child is old enough to digest it. If the gruel is well cooked, and already well digested, and carefully strained it will be tolerated and readily assimilated. Cooked starchy food as rice, corn-

starch gruel, should not be added to condensed milk, as it being changed into dextrin, then into sugar, simply increases the amount of lactic acid in the system, and consequently the tendency to disease.

To prepare condensed milk add one teaspoonful of condensed milk to twenty or twenty-eight parts of boiling water. It should be made stronger as the child advances in age. There are several foods prepared with condensed milk. The best known are Nestle's and Gerber's. The newest is Malted Milk Food.

ARTIFICIAL MILK.

Attempts have been made to produce an artificial milk, but they are not very successful. Condereau for example, recommends a mixture of eight eggs with two ounces of sugar and enough water to make a pint and a half of liquid, to which he adds a little lime water and a small quantity of Sulphate of Potash and Chloride of Sodium. This may be tried when good milk cannot be obtained.

Dubrunfaut states that a good substitute for milk may be made by emulsifying about 900 grains of Olive oil or other comestible fatty matter, with from 600 to 780 grains of sugar (milk sugar, sugar cane or glucose) from 300 to 460 grains of dried albumen (the dried white of egg, as met with in Paris) and from fifteen to thirty grains of crystals of Carbonate of Soda, dissolved in a pint of water. The liquid thus prepared has the appearance of cream, and requires to be mixed with twice its volume of water to produce a liquid like milk.

But experience has shown that although these substitutes may serve the purpose of milk under some circumstances, as when they are used by adults, yet they cannot be safely used in the nourishment of children, for, as Dumas suggests, it is very probable that there are minute quantities of other substances than albumen, fat, sugar and salts in milk, which are necessary for the nutrition of infants. Even cow's milk does not always agree with them, the curd being very different from that of woman's milk, and it always requires to be diluted with about one-third of its bulk of water, and to be sweetened with sugar before it is given to children.

ALMOND MILK.

Almond milk is an artificial milk that I have used, and can vouch for its great value. A kind friend skilled in its manufacture and use, gives the following directions:

"Take two handfuls of almonds, blanch a very few at a time by placing four or five in hot water. Do not put all in at the same time, or they will get oily. After they are blanched, put in a mortar or heavy bowl, and pound them into a paste. Then add one pint of water. Let stand half an hour or more and strain through a fine cloth. Be *very careful* not to allow the least particle of nut to pass into the milk. (This should be sweetened with sugar of milk, in the proportion of a teaspoonful to a pint of the almond milk.) Give a tablespoonful at a time. In case of any inflammation

of the bowels, I found mixing the food with part water and part almond milk, better than cow's milk."

S. J. H.

DEXTRIN FOODS.

There are a class of foods that although styled farinaceous are not strictly so. They should be styled dextrin foods, and we have so designated them, and are so recognized by the profession. In these foods the starch is half digested, being changed into a gum and the next change is into cane and then into milk sugar.

Foremost amongst these in reputation stands Liebig's, which in America is manufactured by Messrs. Horlick who puts it up in very convenient glass bottles, hermetically sealed. This food which Liebig recommends for infants has considerable reputation in Germany, as an article of diet for children. The preparation is made by mixing one ounce of wheaten flour with ten ounces of milk, and boiling for three or four minutes, then removing it from the fire, and allowing it to cool to about 90°. One ounce of malt powder, previously mixed with fifteen grains of Carbonate of Potash, and two ounces of water are then stirred into it, and the vessel being covered, is allowed to stand for an hour and a half, at a temperature of about 100° F. It is then put once more upon the fire and gently boiled for a few minutes. Lastly it is carefully strained, to remove any particles of husk, and then it is fit for the child's food. The composition of the food according to Dr. Liebig is as follows: (Letheby.)

	Plastic matter.	Carbonaceous matter.
Ten ounces of milk - -	.40 oz.	1.00 oz.
One ounce wheat flour -	.14 "	0.74 "
One ounce malt flour -	.07 "	0.58 "
	0.61	2.32

The relation of the plastic to the carbonaceous being as one to thirty-eight, which is the right proportion for the food of children. The effect of the malt flour is to transform the starch into dextrin, and thus the mixture gets thinner and sweeter as it stands; and the Carbonate of Potash is added to facilitate the change, and to neutralize the acid constituents of the flour and malt. This food does not always agree with thin muscular children and for very good reasons. When we consider the large amount of Potash in American wheat and barley, especially that grown upon new land, and the amount of Potash in cow's milk, and last of all, the amount of Potash in this class of children, we can easily understand why it causes a serious diarrhœa in them. In Europe where there is more Soda, (Chloride of Sodium) in the air and grains, we can understand why Liebig recommended the addition of Carbonate of Potash. The author has advised that Bi-carbonate of Soda be added to Horlick's Food, and with better results. The Soda is needed to unite with the bile acids and prevent their liberation. Much indigestion arises from their irritating presence in the intestines.

Boiled flour ball is an ancient form of half-digested starch. It is made as follows:

Take one quart of good flour; tie it up in a pudding-bag so tightly as to make a firm, solid mass; put it into a pot of boiling water early in the morning, and let it boil until bedtime. Then take it out and let it dry. In the morning, peel off from the surface and throw away the thin rind of dough, and, with a nutmeg-grater, grate down the hard dry mass into a powder. Of this from one to three teaspoonfuls may be used, by first rubbing it into a paste with a little milk, then adding it to about a pint of milk, and, finally, by bringing the whole to just the boiling point.

Gerber's Milk Food is coming to be a popular food. It is made in Switzerland of condensed milk and cooked flour or bread. The dextrin taking the place of sugar, and when cooked in eight to twelve parts of water, according to the age of the child and its digestive capacities, it corresponds very closely to mother's milk. It has proved excellent in children where the butyric fermentation (cheesy odor) occurs so as to render a milk diet harmful. It is well adapted to very young infants. As their powers of digestion increase they should have more casein than this food affords.

Nestle's Milk Food is similar. The coarsest of whole wheat-meal is mixed with milk condensed to a powder. The taste and action is similar to that of Gerber's food, with the exception that it seems to contain more casein and therefore is an older food, *i. e.*, adapted to older children.

Malted Milk Food is a preparation that resembles the above. It is supposed to be superior.

Malted Milk Food is prepared with barley malt, wheat flour rich in gluten, wheat bran, to which is added fresh grass-fed cow's milk, with sufficient bi-carbonate of soda and potassa. The first three, with the salts, are raised to a temperature of 150° F., and maintained at that point until all the starch is transformed into soluble dextrin and grape sugar by the diastatic action of the malt; it is then pressed, filtered and mixed with the milk, and the whole evaporated to dryness at a low temperature in vacuo. It is preserved and sent out in glass jars, convenient and ready for instant use. This food was especially designed for the large number of city children who cannot get good, reliable fresh milk. In the country, where pure milk may be obtained, Horlick's Food may be found preferable. For very young children deprived of breast milk, I have found Malted Milk a good substitute. It may be given dry, as well as in the liquid form. This form may be preferred where the bowels are very loose.

Mellin's Food is a popular and very easily digested food. It is composed of maltose, dextrin, albumen, peptone, animal compounds and inorganic constituents — chiefly of potassa, lime salts and phosphates. It is made after the formula of Liebig, in a very uniform manner, and has an extensive use. It has given excellent satisfaction in a large number of cases where other foods have not agreed. It has been found efficient in children suffering with cholera infantum, constipation, dyspepsia, etc. It has a wide sale in the East.

Lactated Food is a new candidate for favor, and has a combination that makes it different from either of the foods mentioned. As its name would indicate, it has for its basis milk sugar. The composition of Lactated Food is as follows: Lactose milk sugar, 25 parts; malto-diastase, 15 parts; soluble carbo-hydrates, 41 parts; gluten and soluble albuminoids, 16 parts. There are also added potassium, phosphatic and sodium salts. It is, therefore, a predigested, non-irritating and very easily assimilated article of diet. The large per cent of sugar of milk it contains renders it very similar to the breast milk of the mother. The action on the kidneys is not marked, and hence it has proven especially valuable in cases of incipient diabetes, often met in the early stage of cholera infantum and summer complaint. This food has been cordially received by the homœopathic profession, who for years have often advised the addition of pure sugar of milk to the babies' food.

Carnrick's Soluble Food is made up of about equal proportions of partially digested powdered cow's milk and wheat flour, the starch of which has been converted into dextrine. The partial digestion is accomplished with pancreatine. This food is, therefore, more easy of digestion and assimilation than Nestle's or Gerber's. Cases in which the fatty acids occasion trouble, known by rancid vomiting, will be especially benefited by this soluble food. It is only necessary to add water to this food. The analysis shows that it contains the proper proportions of flesh, fat and bone formers for the proper nourishment of the child.

FARINACEOUS FOODS.

Foods so-called are, says Letheby, only baked flour, sometimes sweetened with sugar. The flour must be baked until it acquires a light-brown color, the temperature being about 400 or 450° F. The granules of starch are thus disintegrated and converted into a soluble substance, named dextrin, which by a further process of cooking or boiling, as in making pap, forms when properly sweetened, a very excellent food for children. Tops and bottoms (split crackers rebaked) so much used in England, owe their value to the same circumstances, namely, that the farinaceous matter, which is so indigestible with infants, is broken up by extra baking into soluble dextrin. There are many varieties of this class of food in the market, and many domestic varieties.

Luguminose is an infant food introduced from Germany and is made from lentils (peas, etc.). With cream it has been found to agree with some young children.

Neave's Farinaceous Food is one that experience has given great prominence to in England. An analysis of it shows nitrogenous elements, 14.7; starch, gum, etc., 75.5; cellulose, 3.5; mineral salts containing Phosphorus 1.2. The starch is largely changed to gum or dextrin. It should always be fed with milk, and is best adapted to children whose digestive powers are considerable although it has proved of value for infants also. It is but recently introduced into this country. It will have a large sale.

Ridges' food has a wide sale in America and corresponds closely to Neaves'. It is made as follows: Whole wheat is ground, after the siliceous coating is removed, then steam cooked in iron chambers, then it is ground again and sifted, sweetened and some Bi-carbonate of Soda added to it. This food it will be seen retains the rich nitrogenous layer next to the cuticle, which is called cerealine. This is very soluble, of the nature of diastase (a sort of artificial saliva) and has the property of dissolving starch.

Granum is another form of cooked flour which has been found an excellent combination with milk.

VARIOUS OTHER FOODS.

Other starches, viz: arrow-root, tapioca, sago, *tous les mois*, salep, corn-starch, are, as is well known, extensively used, and they have their merits.

As Dr. J. C. Morgan, who gives valuable hints on the diet of infants and older children, says: These hydro-carbons, alone, are calorifacient, (heat producing) and so far useful in that direction; but are utterly without value in nutrition of azotized (muscular) tissues, except so far as to supercede the undue combustion and waste of these in the process of calorification. They also allay the sense of emptiness and hunger, when other foods cannot be taken. The same may be said of sugar in every form, including honey, molasses, rock candy, "gum-drops," etc. A dash of tea or coffee, in diluted and sweetened milk (commonly called "cambric tea,") may have a more positive

influence against waste, or in some cases; supposing them medicinally unobjectionable.

Mucilages, as of gum Arabic, or Irish and Iceland mosses belong to the same category with starch and sugar; barring the iodine of the Irish, and the bitterish *cetrarin* of the Iceland moss. They are prepared by steeping either in cold, or better, in hot water; sugar or rock candy being added, if desired. For infants sugar of milk is always better.

Gelatine, as a jelly, with or without wine, is comparable with the starches and mucilages. As a constituent of soup, prepared from a young shin-bone of beef (not wholly devoid of meat-fibre,) it may prove valuable. Pearl barley, or rice, may often be added with advantage. So also, vegetables; which, for a young child should be strained.

The Germans prepare soups of many things not so used by Americans; and it may be well to learn from them. Milk-soup, bread-soup, etc., may be said to be soup or porridge-like preparations of those substances, rather thin, and often none the worse for that.

Vegetable soup itself may be mentioned here. It is composed of all the ordinary market vegetables, in their season, so far as convenient; made into a decoction, and strained. Out of season, canned or dessicated vegetables may answer. In the preparation of these, and in all other sick-room cookery, so far as can be, non-metallic surfaces only should be allowed in contact with the materials used. A simple method is to put them into an ordinary bowl, setting this into a sauce-

pan of water, and covering the bowl with a saucer; (the "water-bath.") The water in the saucepan is made to boil; aud thereby, the food is duly cooked. If higher heat be required, a pan of sand (the "sand-bath,") may take the place of the saucepan of water.

Strained vegetable soup is prepared by boiling a teaspoonful of rice or barley in a quart of water, with a little salt, to which is added a large potato, a tomato, celery, if in season, a grated carrot, and a little parsley for flavor, if not objectionable on account of its medicinal properties. Other suitable vegetables may be used if desired. The vegetables should be finely chopped up before being introduced. After boiling slowly for several hours, the soup must be thoroughly strained through a fine sieve, and all the remaining undissolved matter, consisting chiefly of woody fibre, should be rejected as useless. This preparation should be given to children only after the eruption of the molar teeth.

Carrot food is made by grating an ounce of carrot into a half-pint of water, letting it stand twelve hours. Strain, then add bread, arrow-root, cornstarch, or cookie enough to thicken while it comes to a boil; salt and sweeten if necessary. Very valuable in low forms of disease. Added to milk it is sometimes excellent for infants. Dr. Shipman, superintendent of the Foundling's Home, thinks very highly of it, especially for sick infants.

The inside of roasted potatoes, perfectly done and mealy, prepared to suit the taste, say with butter, milk or cream, and salt, will often prove good food if no

contra-indications exist. As a general rule, all fruit and vegetables have a laxative tendency; but exceptions may occur; and a mealy roasted potato is as little objectionable as anything of the kind. Fricasseed, or steamed potatoes, prepared with "drawn butter" may sometimes do better, so far as delicacy of palate is concerned.

Various cereals hold a high place as artificial diet. Maize, or Indian corn meal, apparently the crudest of all, may at times prove palatable. The white meal, finely bolted, and extremely well cooked with water, salted to suit the taste, and dressed with cream and sugar, is usually wholesome as well as nutritious.

Whole, cracked, or ground wheat, barley, rye, oats, rice, beans, lentils, peas, in soup-like, gruel, or porridge form, strained or made into bread; and as to rice, the well-boiled grain, all are available, prepared with cream, butter, sugar, etc., according to circumstances. Strained bean-soup has proved "just the thing" for a child convalescing from dysentery.

Entire wheat flour. This is a fine flour made from grain. It is ground fine and is one of the most superior articles of diet when such a thing is needed.

Prepared wheat, barley, etc., made with cream and water, not milk, are an extremely valuable class of dietetics. Hubbell, Moxey, Crew, of Philadelphia and other parties elsewhere, manufacture large quantities of the former. The latter answers a good purpose in rotation. Hubbell's process is essentially as follows: The grain, after threshing, being contaminated exter-

nally with a filmy silicious coating, is subjected to friction between two layers of wet canvas, to wash it off. It is then dried on webbing, with the aid of heat, afterward ground into flour in the ordinary manner, and finely bolted. The first one-sixth bolted is what is termed "pastry-flour," used rarely by any but pastry-cooks, and consisting principally of the redundant starch; this is rejected. The whole remaining portion is then floured and finely bolted, as often as necessary; and sifted in a shallow layer upon unglazed earthen plates, on which it is baked twelve hours at a temperature of about 212°, which bursts the starch granules, changes this to dextrin, and aggregates the layer into a firm mass. Finally, this is again floured and bolted. The product is a fine cream-colored flour, containing the normal quantity of albumen and gluten, a good proportion of the disintegrated, dextrinized, hence soluble starch, and all the earthy matters, as Lime and Magnesia; along with the Iron, Manganese, Salines, Sulphur and Phosphorus; besides sugar and gum. In relation to the bowels it is anti-diarrhœic; should it constipate, cream reverses this. Its preparation for use does not differ materially from that of other farinaceous diet. In this connection, a medical friend reminds me to urge, most strongly, two points: 1, boil these articles in water, two hours, (except those like Hubbell's, are already torrified) in order that every particle of starch may be rendered soluble; 2, if milk added, let it be only five minutes before taking off the fire, since it suffers by long cooking, in coagulation and

loss of the albumen; and the necessary change of the starch in the meal is also counteracted by the same coagulum.

Crew's Prepared Food bears a general resemblance to Hubbell's.

Moxey's Cerealina is comparable with these, and derives its name from the nitrogenous, catalytic, digestive principle, named cerealine, contained in the grain next to the cuticle. All of these substances present the nutritive matter in a favorable state for solution in the stomach after but little boiling, and also deprived, to a varying extent, of the cruder portion of the bran. Similar remarks apply to prepared barley, etc.

The "Keystone Company's Flour with sugar of milk," is a competitor with these, and may be preferred by some on account of the latter constituent.

Papoma, Nutrina, etc., are recent rivals.

Pearl barley is the crude article wholly deprived of bran, by mutual friction of the grains during continued agitation in a revolving mill, without other change.

Farina, a well-known dietetic is flour prepared from wheat which has thus been "pearled." Both of these consequently require long cooking in order to render their starchy constituents soluble. Moreover the pearling process is wasteful of the gluten and phosphates, so needful for the nutrition of muscle, bone, etc., and which are largely removed along with the bran.

A better preparation, probably, may be improvised by an old-fashioned recipe known as "Boiled Flour"

already mentioned. It has some repute as a remedy in diarrhœa, given in the form of "pap."

Various agreeable dietetics, commonly used for dessert, may be made from farinaceous substances as food for the sick, and for young children. Plain puddings, and blanc-mange are examples. The manufacturers of "Cerealina," etc., give more or less explicit directions on their packages as to these.

Racahout, as prepared by Hubbell, is composed of arrowroot, salep, (another starchy principle) farina, and sugar of milk, with cacao, flavored slightly with vanilla. It is used as nutritious drink, resembling chocolate in some degree. It is suited to nursing mothers and convalescents, as well as to some children.

Hominy, (Indian corn, deprived of its siliceous exterior by steeping in lye), if soaked in cold water over night, and subjected to long boiling, lastly dressed with butter and salt, is a digestible as well as delicate dish. But for children, the smallest hominy, *i. e.*, Grits should be used; so, also, in the case of convalescents generally. The thorough cooking of these is the condition of their digestibility.

Mush, renowned in verse as "hasty pudding," or fine white Indian meal, prepared by very long cooking, salted, and dressed with milk, butter, molasses, or sugar, is a well-known and very important dietetic, often too much over-looked.

The same sort of preparation of oat-meal "oat-meal mush," is often preferred; and rye-flour is equally in

favor with others. Oat-meal is, to some, when used at supper a positive laxative.

Gruels of the same materials are familiar. Less known, are gruels made of rice-flour or pulverized cracker, or soda-biscuit. "Cracker-dust," ready-made for other purposes, may be employed conveniently for this, and produces a very good dietetic. Unbolted, or "Graham flour," may be used in like manner, thus securing a large amount of nutritious matter, in the way of gluten and phosphates, which are lost in preparing fine flour.

Bran-mash, well-cooked, is often acceptable dessert for the well, and may be dressed as suggested above; being like other forms of bran-flour, laxative to the bowels. Thick, or thin like gruel, it may become a special diet for children.

Bran-bread, or Graham bread, is valuable for similar reasons, and is, like the other forms, in favor with dyspeptics who are constipated, on account of the mechanically laxative effects it exerts. So, also, bran-crackers. The same may occasionally be used for children, prepared in any of the forms in which ordinary bread and crackers may be given—of which we shall have something to say directly. Bran-bread pudding consists of the crumbs of bran-bread, over which has been poured boiling cream, sweetened to suit.

Rye-bread is suitable for rotation with other forms, or even as a main diet.

Plain panada is a primitive but often (when rightly made) very palatable diet. It should be prepared thus:

Remove the crust of a slice of baker's bread a day old, break it small into a hot bowl, sprinkle with sugar to suit the taste, pour over this a liberal portion of cream or rich milk, and finally, enough scalding hot water to cover the bread; chop it rapidly with a silver butter-knife until reduced to a fine, loose pulp (never mash it with the side of the knife or spoon), and allow it to stand until cool enough to swallow, when it should be eaten.

Cracker, sweet or plain, or other kinds of biscuit, dry or soaked in water, or "cambric tea," buttered or not, are often invaluable.

Ordinary bread and butter, or bread and gravy, and the like, when moist, often affords a good nutriment for even very young children, as most mothers are aware.

Unfermented bread and biscuit—*i. e.*, made of dough without yeast, but charged mechanically with pure atmospheric air—may be preferred when common bread sours on the stomach.

Bread toasted, deprived of the crust, may be treated in a similar manner, and may prove serviceable if flatulence from decomposition of food, etc., be a symptom; and also for the mere purpose of rotation. But occasionally it causes such symptoms when not already present, probably in the character of Carbo vegetabilis. The ordinary milk-toast, cream-toast, or water-toast, with butter, may often be utilized in the case of children.

Zweiback—bread of the kind called "rusk," or "tea-

buns" twice baked—that is, baked in slices, is susceptible of minute division with ease, and may be used somewhat like cracker-dust in a gruel form, or in panada or soups.

Sponge-cake, plainly made, is something which most children relish,—similar cake is "lady-fingers." Both of these may be given, dry or moistened, to almost any child, sick or well.

The youngest children, those who have no teeth, may be fed with comparatively strong food, if the mouth of a healthy person be employed to masticate it beforehand. The starchy part of bread, crackers, etc., is thus acted on by the saliva, and all substances perfectly comminuted before administration. Hence, a most important diet for a half-fed infant, sick or well, may often be found in chewed cracker, chewed meat, etc.

A child may, if not voracious, be satisfied by sucking a cracker, or a tough crust of bread, held to its mouth. The same may be said of meat cut into a strip, parallel with the grain, in order not to separate in chunks. But so brittle a substance as soda-biscuit should not be so used, lest, as I have witnessed, a small flake getting over the glottis fatal suffocation occurs.

Meats of various kinds are all-important in many cases of articial feeding of infants, whether in fluid or more substantial form. They should be neither too young nor too old. Both are indigestible, and do mischief each in its own way. Mature but still young meat is valuable in various forms. Beef, mutton, and

chicken may serve as types of all, and may be resorted to in rotation. Salt meats may vary the list.

Common soup has already been alluded to. Decoctions of the above are familiar, as beef-tea, mutton-broth, chicken-tea. Farinaceous or other addenda are sometimes employed.

Beef extract (often misnamed beef-tea) may be prepared fresh, or its partial equivalent obtained from a roast joint when cut. It is best made in a good-sized clean bottle, putting finely divided beef within it, corking tightly, and boiling the bottle in water for some time. The liquid is then poured off; a trifle of salt should be added. Salt put in at the beginning of any such process may become so concentrated as to render the extract or the decoction unfit for use; and even without this, the natural salines may occasionally do the same. *

The concentrated beef extract so commonly sold is, when not objectionable to the taste, of great value. In wafer-capsules it may be made applicable in still other cases, perhaps. This is sold as Liebig's Extract of Beef, sometimes under other names.

Cold infusion of beef, salted slightly, may prove agreeable as a diet drink when such temperature only is acceptable. The process of percolation *a la Cafe Francaise*, may be applied by non-metallic apparatus to finely divided meat, the product being kept surrounded by ice; or being finely divided and pounded in a crash cloth, it may afterwards be subjected to a strong press,

*_Bovinine_ is a form of liquid beef-food that is very convenient. Whether it is blood, glycerine and a little wine or diluted alcohol, it certainly is a very concentrated food in a palatable shape. For children it may be diluted with milk or with warm water. It is a highly nitrogenous food, and especially valuable where great waste is going on, or where constipation is an evidence of mal-assimilation.

a little water added to the residue and pressed again, just as in the preparation of the fruit syrup.

Cold beef-tea with Acid: Take lean beef, one-half pound and chop fine; add water twelve ounces, salt one teaspoonful, and Muriatic acid three drops. Let it stand two hours, strain, and it is ready for use.

Meat, raw or cooked, may be scraped, so as to afford nourishment for an infant; or it may be finely hashed, as if for sausage. The latter may be reinforced by potatoes, etc., when not contra-indicated by diarrhœa. The great danger is that the comminution may be imperfect. This must be guarded against.

Damascene preserve consists of raw beef chopped and pounded, along with white sugar, until finely comminuted. This has proved a life-saver in many instances. The one doubt of its value lies in the possible presence of parasitic germs (as of tænia) in any form of raw meat.

Frying, as a method of cooking is generally objectionable; but meats broiled or roasted are good; the latter, especially. A close utensil, such as a "Dutch oven," which retains every particle of vapor, is economical of the volatile principles, and hence secures the choicest product, which may then be employed in any of the ways herein alluded to. The same instrument bakes the best Indian corn bread. An excellent temptation to appetite is found, often in a wafer of beef, the thickness of cardboard, cut across the grain, carefully broiled, buttered and slightly salted; and for a little child, very finely divided.

Stews and fricassees are adapted to those who can chew, when convalescent, and to whom the peculiar flavor of a roast may be disagreeable; or in the way of rotation, very fine hashes may suit some who cannot masticate.

Dessicated meats, *i. e.*, with the moisture completely evaporated may be sometimes utilized; being easily grated, and containing in this state, a large proportion of absolutely nutritious matter. This may be given like the beef extract, in hot water, or dry, in a suitable vehicle, as the wafer, or jelly, or stewed fruit, which may be punctured to insert it; small masses at a time.

Fish have a certain value in the dietetics of childhood, as well as of older persons. Fish without scales are to be generally eschewed, but this leaves a long list of scale-fish, which admirably fulfill the requirements of organic and inorganic elements of nutrition, especially in nervous exhaustion; Phosphorus being prominent among the principles thus afforded—and in a state prepared for assimilation. Being easily picked to pieces, a young child can take it. Rock-fish, boiled, and dressed with drawn butter, broiled or "planked" shad, perch, etc., are prominent, and the cosmopolitan "Digby herring," (a very small, smoked fish), eaten raw, proves a capital appetizer.

Shell-fish, *i. e.*, oysters, (rarely clams), are often a boon. The juice, or the soup of a plain stew, with crackers or otherwise, may be the initial form; afterwards, the tender portion of the oyster itself. In stewing, the juice is to be first cooked with milk and

salt, and the oysters added when it boils; letting them remain on the fire only until heated through. Thus they remain tender.

Oyster-hash, very fine, made only of the tender portions of such stewed oysters, may be given when that form is most manageable. Even a fried oyster may sometimes be chewed very fine by the mother of a sick or badly nourished child, and prove in this state a grateful and digestible diet.

But one of the most precious hints I have ever received in the matter of diet, was derived from a half nourished babe, in the presence of a plate of raw oysters. It made such violent demonstrations of craving for them, that the mother, holding a fine one by the tough muscular portion, allowed the child to suck the remainder, which it thus demolished in a short time; and by acting on this hint, the difficulty in its case was abridged at once. I have since repeatedly prescribed the same with excellent effect—even in adults, who, whilst unable to eat, could yet suck a raw oyster.

Eggs in various forms are another staple. They contain (the yelk especially), all the essentials of nutrition. Allusion has already been made to raw yelk and cream. It may be given by the mouth, a teaspoonful every half hour or hour, as a dose, when there is unwillingness to eat it. An enema of a wine-glassful or less may be given every two or three hours, when it is refused otherwise; and it will nourish almost as well in this way; being fully absorbed by the rectal mucous membrane.

Hard boiled yelk of egg is fairly digestible; and may be mashed with a little butter or cream and salt, and given in doses. This, or any other semi-solid substance may be given diluted with water, cream, etc. Continuous, compulsory nourishment is in many low states of the system, an essential condition of saving life. Small in quantity, wholly and comprehensively nutritious, such doses are often particularly useful; and, in rotation with other articles, as (in the absence of fever, or at least, when the urine is capable of forming sediment), beef-tea, besides prepared wheat or barley, etc., may enable us to carry the patient over some very dangerous places.

In cough-cases, intestinal disturbance, etc., white of egg with water, kept cold by setting in a bowl of ice, and given in sips, is often a palatable demulcent and nourishing drink. Or, if a high temperature be wished for, it may first be mixed with very warm (not boiling) water, and set, in a hot water bath, on the stove or nursery lamp.

Egg-soup is the same as the last, with the addition of the partially beaten yelk; and in this case a little salt will be desirable.

The ordinary soft-boiled egg, especially with bread-crumb and a little butter and salt, is a frequently available diet for young children.

Plain custard, *i. e.*, egg, milk and sugar, without spices, may sometimes prove an agreeable form.

Fruits recent and dried, are useful adjuncts to other food, affording a vehicle, or it may be a dressing for

less palatable things. Perfectly ripe, sound, well-flavored fruit, deprived of skin and core, is much more rarely hurtful than is often supposed. If even it should prove indigestible, eaten with imperfect mastification, (as ought to be expected), attention to this point may obviate the trouble, and secure positive benefit. A very simple and easy method of administration consists in scraping the pulp with the end of a silver knife, and placing upon the child's tongue. There is a general laxative impression to be anticipated, however, from the use of fruit. Apples, bananas, or other succulent forms, eaten at bedtime, are a favorite resource with many costive persons. Dried figs or raisins roasted, or stewed in milk, have a value other than dietetic, in cases of immature gumboil, to which they may be usefully applied (within the mouth) as a poultice, after splitting. Again, ripe fruit may be mashed and strained through a coarse medium, as cotton lace, thoroughly cleansed from its stiffening material or sizing. Jellies may be prepared from this by the addition of sugar and gelatine, and kept ready for use. No metallic substance should, if avoidable, be brought in contact with the fruit. Stewed fruit are often a convenient, agreeable and somewhat laxative diet—prunes especially; although I prefer the dry, uncooked prune, freely eaten, for this purpose. Canned fruit is often a good substitute for the fresh, but glass or stone jars are better than metal cans. The juices of new fruit, made into syrup, are of great value in the preparation of drinks for the sick. New cider, new wine, or other

natural juices, set in ice, may prove grateful drinks. These may be varied occasionally with toast-water, preserved in like manner. This is good only when the untoasted portion does not come in contact with the water, and then the bread is really toasted, not charred in any degree. Slices as large as a man's thumb, of baker's bread a day old, toasted just brown on every side, are to be steeped in cold water until the latter is sufficiently colored; then carefully lifted out without breaking. This is real toast water. "Crust coffee" resembles this, but is made with good crust of bread and hot water, and may be used as ordinary coffee.

Wheat coffee, rye coffee, etc., made of the roasted grain, so familiar in war times, may be used by the sick as substitutes for genuine coffee, with or without the addition of a trivial flavoring of the latter. Like the real coffee, and tea as well, they may be used hot, with or without sugar and cream; or, again, may be iced, as many epicures prefer in the use of these their favorite dietary stimuli.

The goal we seek in the case of infants who are incapable, from retarded dentition, of masticating the solid food which their age and size seems to require is, the completion of this process at as early a moment as possible; after which we may rest easy, in most cases, on the score of their nutrition, unless suffering from some fit of sickness.

Certain dietetic preparations, as Castillon's Powder, are composed of farinaceous substances with an appreciable quantity of calcareous matter. My preference is

decidedly in favor of giving the food and medicine separately.

MOST INFANTILE FOODS.

Amid such a profusion of articles of food for children the mother may be at a loss just what to select, and it is proposed to give her a few hints that will help her in this most important task.

Milk we remember is the food for children, but the trouble observed with fed children is to get milk to agree with them. All the effort is in this direction. We have already intimated what is the most apt to agree with the nursed infant. We have also seen the various methods resorted to, to make animal milk like human milk.

It will be seen that the most infantile food, or the food adapted to the youngest infant is one that contains much fat and little casein. Cream diluted with water and sweetened with sugar of milk, is the best artificial preparation of food that corresponds to colostrum.

After the colostrum disappears, that is about the second week, the next food should contain more casein. Now the top of the milk should be made to agree. It may need more than dilution with water and sweetening, and that will likely be the addition of some cooked arrowroot, cornstarch or rice flour. This food is prepared in the following manner: A teaspoonful of arrow root is boiled in a cupful of water until it is well done, *i. e.*, has a sweet and not a raw taste. To this is added a teaspoonful of sugar of milk while boiling,

Now the milk is added in equal proportions. This cools it sufficient to go at once into the nursing bottle, and is usually relished by the child, and will agree for a time at least. But if neither arrow root, cornstarch, farina, rice flour, nor any of the similar mild starches agree, then the choice will rest with the prepared foods. Here they may be selected in about the order described. The first thought of will be either Nestle's, Gerber's, Horlick's, or possibly Neave's, Ridge's, etc. We are sometimes surprised to find that what we supposed was the most infantile food would not agree, while a food like Neave's would be well borne and the child thrive on it.

There is often a natural national bias toward a food that even an infant will manifest which must be taken into account. If the mother dislikes a form of food like sugar or milk, we may venture the opinion that the child will be apt to have a similar constitutional bias, especially if the dislike occurred during gestation. On the other hand if the mother had a special liking for a given form of food like rice, cornstarch, etc., we may also expect to find that the infant would have a similar preference. Not withstanding all, the coarse harsh articles we would not expect an infant to digest even if they craved them. What a child will take is not always what it needs. A child may take a food steadily and starve, it may even grow plump and still be so feeble that the first slight illness will carry it off. We should know what is the best food for each epoc in the infant's life, so we naturally inquire what is the

FOOD FOR THE FIRST SIX MONTHS.

The first month of the first year is the most important one. If there is a possibility of the infant getting any milk for the first few days, it should not be fed. Nothing should be given it until the milk arrives, unless clamorous, then it should be fed as little as possible. Here cream diluted is one of the best adapted to the needs of the infant body. As soon as the milk arrives it should not be fed, as there is enough usually at first, for the wants of the child. It is towards the end of the second week that the milk may decrease in quantity and at this time the quantity and quality of the milk should be ascertained. If the mother's milk is ample, of course no other food is necessary, but it may be fed once a day, as we have intimated. This habit should be began early. It should take the breast once in two (2) hours for the first six weeks; afterwards, once in three (3) hours, except from 9 or 11 P. M. to 4 or 6 A. M. Frequent nursing through the night is injurious to both mother and child.

If the mother's milk is insufficient, and cannot be made sufficient by proper food, the following may be given in addition, until the breast milk becomes sufficiently abundant: A teaspoonful of cream and half a teaspoonful of loaf sugar or sugar of milk may be added to four tablespoonfuls of hot water. The child should be fed by rule.

When children are to be brought up by hand, milk should be given for the first eight days in the form of a

dilution of one part cream and three parts water with the addition of one part milk-sugar. When the bowels are constipated, a little barley water may be added. The sugar should be added to the water before the milk.

From the first the cream should be rich for the first week, then gradually lessened in quantity, more and more milk taking its place. I have known the feeding with cream kept up for months, to the detriment of the child. They grow fleshy and were pronounced "plump little things" but to the critical eye they were far below the average. It is important that we glance at these cases so that all may recognize them. They are plump it is true, regular "butter balls," but there is little muscular or bony development. They sleep good, in fact sleep too much. They do not eat much, a little food seems to satisfy them, notwithstanding their bowels are loose. Cream food satisfies the system for a few days, perhaps the first two weeks or a month, then more casein should be added.

If the cream food has not agreed and the whey food had to be given instead this should not be continued long and great care should be taken to add just enough whey to curd the milk. If too much is added the lactic acid will attack the bones and affect the child badly. If not enough is added to curd all the milk and it agrees it is all right, then we may try the milk diluted alone without the whey or cream.

Some children with small livers cannot digest much fat food, and will belch or vomit fat food every time it is given. It will always come up, some time after

eating, smelling like rancid butter. Under such circumstances it is useless to persist with fatty food. Whey food should be given instead, and if that does not agree, then one of the prepared foods should be used.

From the eighth day the child's food should be given in the proportion of one part milk and two parts water; or of four spoonfuls of boiling water poured upon one of sweet cream and then add a very little loaf sugar or sugar of milk. This is entirely suited to the stomach of the youngest infant.

After six or eight weeks it should be prepared as follows: Boil a heaping teaspoonful of sugar of milk in half a teacupful of water for fifteen minutes,—then add half a teacupful of nice fresh milk and it is ready for use. If allowed to get cold it should be warmed by dipping the bottle containing it into hot water. The milk must not be boiled unless the child has diarrhœa. The milk should be kept in a glass fruit jar, and in warm weather should have a wet cloth wrapped about it, when ice is not at hand.

As to the quantity for the first two or three weeks, six or eight tablespoonfuls at each meal will be sufficient; this can be gradually increased as the child grows older.

When milk is rejected, a teaspoonful of cooked arrowroot or cornstarch, or a piece of isinglass an inch square, or a corresponding portion of pure gelatine, dissolved in eight tablespoonfuls (four ounces) of milk and water, will prevent the milk running together into large curds,

In these cases some of the infants' foods may be used to advantage.

When about four months old, or near the period of teething, the water should be one-third of the mixture, and gradually diminished until we have pure milk. After the fifth month a little meat broth may be given (not oftener than once in twenty-four hours), or the addition of oatmeal or starchy food well cooked. After six teeth have appeared then more food may be given.

The bottle must be kept fresh and clean. Empty and wash it thorougly after every meal. Soak the teat or tube in a little Bi-carbonate of Soda if living inland (on the sea-coast use Carbonate of Potash) in the water until wanted again.

An egg drink, consisting of twelve tablespoonfuls (six ounces) of boiling water, which is cooled down to 100° Fahr., (blood heat), is stirred up with the white of an egg and seasoned with salt. To this mixture is added later the yellow of an egg in gradually increasing doses. This preparation is particularly well adapted alone or as an addition to a weak broth during the latter part of the sixth month or during teething, and should be given once and finally twice daily.

Many children are overfed. Some mothers feed the child every time it cries. A small, thin child will cry very much from colic until it becomes fleshy. There is so much acidity in its system that it will be in distress. The cry from hunger is a mild sort of a cry compared to that caused by pain. If the child has

gastric derangement it should be fed less often, instead of more frequently, as is usually the case, because it seems so ravenous. A child that wants to feed, cries for food every half hour, is suffering with gastric derangement. A child that wants to nurse all night is sick. Frequent nursing at night is injurious to mother, and dangerous to the child. The constant drain on the mother allows no time for rest, and no chance for the system to recuperate, consequently the milk will be impaired in quantity and quality. The proper course in such cases, should be for the mother to nurse it less often (three hours), and not at all at night. She should feed it some. I recall such a case. Child six months old wanted to nurse all the time. The mother was advised to feed it some, or wean it. It refused food. She was weak and yielding. The result was that the child barely survived the next six months. It will take years for that child to recover from the bad effects of those months of starvation.

A healthy child six months old should begin to eat. Oh, but it won't eat. It gags and chokes at food. They all do at first. Stuff it down, as the old ladies do. This seems cruel, but children, babies even, should early learn to obey. There is a feeling, especially with the inexperienced, that the child knows what it wants. That may be true, but it does not know what it needs. The mother should guide its youth. Inexperienced and yielding mothers are responsible for many of the willful and headstrong children we meet.

FOOD NEEDED DURING BONY DEVELOPMENT.

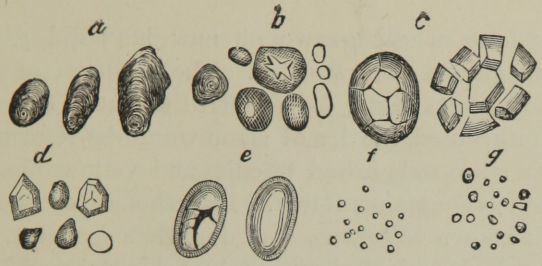
During the time from four to twenty months a great change takes place in the child. The glands of the mouth increase with the increased size of the jaw, due to the growth of the teeth. It is now able to digest grain food, and nature intends it to get a chance to supply the great demand for bony development. It is about this time that serious troubles arise unless the bones are fed. They will assume various forms; gastritis, hydrocephalus, rickets being the most common. If the hot months happen to come about this time the weather is supposed to be responsible for the child's ill health. If the child is nursed the mother should eat bone-making food. Here entire wheat flour, oatmeal, brown bread, cracked wheat, corn bread and graham bread, so-called, are needed. What is wanted is not the coarse food but foods rich in nitrogen and the phosphates. The bulk of white flour, even patent flour, consists chiefly of starch. The gluten is the nitrogenous portion.

THE FOOD GRAINS COMPARED.

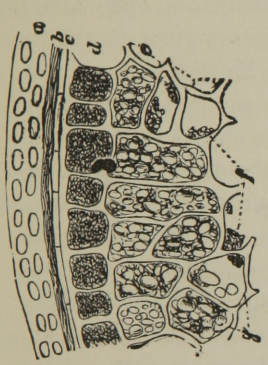
The walls of all the food grains are glutenous and the contents starchy. The thicker the wall, the more gluten, and *vice versa*. It will be seen that wheat has the thickest wall (most gluten) and rice is the most starchy. Oat has a thin wall, and the cells are in clusters. It, therefore, is said to contain casein like

milk. This gives it little tenacity and renders it like rich human milk very easy of digestion. Oat also contains much phosphate and is therefore one of the best foods for children during teething. Wheat is also a valuable article of diet. It contains more gluten. Gluten corresponds to animal fibrin. It will be seen that wheat approaches the closest to muscular cells, and therefore is more like animal tissue and like that tissue, contains much potash. The proportion of nitrogen and mineral elements, including the phosphates, depend upon the gluten. The cells in wheat are not of the same size all through the kernel. The cells in the centre are larger and more starchy while those near the bran contain more gluten or nitrogenous elements. This is well shown on the succeeding page. The dark circle is the gluten cells, while the large white masses are the starch granules. The gluten cells are in clusters interspersed with fat. Fat, we remember, is needed to digest nitrogenous matter. This layer of nitrogen is usually stripped off in the flouring process and bolted out as refuse. The pea cells we see are much like the oat cells and contain much gluten and are rather easy of digestion when well cooked. Food made from them wants extra cooking. Parsnip and beet cells are largely starch, as will be seen by the thin walls.

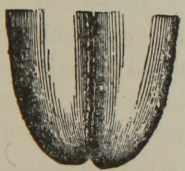
I often wish I could, for the benefit of the rising race, get the ear and earnest attention of the mothers of America for a short time, to combat the mania for white bread. I would not erect a "color line" as has been done for the last twenty-five years. Biscuits made



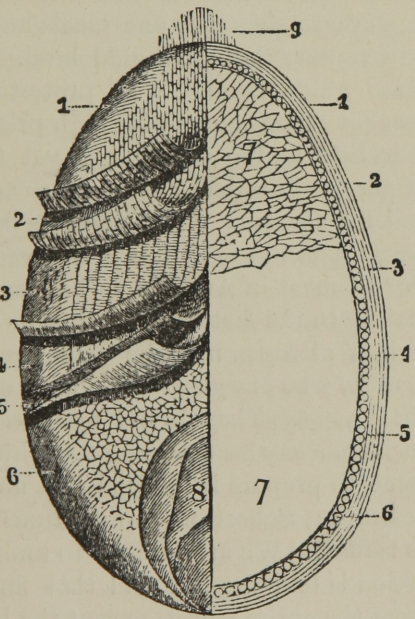
a, Potato cell 1-3000th inch in diameter. *b*, Wheat, 1-1000 inch. *c*, Oat. *d*, Corn and Rice, 1-3000 of an inch. *e*, Bean and Pea. *f*, Parsnip. *g*, Beet Cells.



Section magnified. *d* Nitrogenous layer that aids digestion, usually removed with the bran.



Wheat berry stripped of its siliceous coats only, to make Entire Wheat flour.



The wheat berry: 1, 2, 3 and 9, siliceous coats and brush; 4. 5, 6, and 8 nitrogenous and mineral portions ; 7 starch bulk.

of flour from wheat grown on new land did give a beautiful golden yellow color. The addition of soda to make biscuits light did deepen the tint. This yellow color aroused the ire of some would-be-reformers, and ever since soda raised biscuits and yellow biscuits have been synonymous terms. Bi-carbonate of Potash, the well-known saleratus, was doubtless harmful, but the cry raised against the "yellow colored bread" has driven the millers, the bakers, and the people over into the poverty field of starch. The toothless, emaciated, immature forms that one meets at every turn ought to be a protest that all should heed. Mothers should let sense guide them. Who protests against a steak on account of its color? Its high price shows the esteem it is held by the people, and yet the rejected portion of the grain is just as nutritious as the choicest steak, and far cheaper. One who eats flour from the entire wheat does not need much beef steak. The consumption of meat in America is enormous, and this is due mainly to the fact that we live on starch bread. The lack of nitrogen must be made up in some way. The Scotch, who are great consumers of oatmeal, eat very little meat. They do not need it. No country raises such choice wheat as does America, and yet when we come to prepare it for food is it not a marvel that the healthiest, richest, most nutritious portion is rejected as refuse! We are pleased to know that a decided reaction is taking place and that fine flour is now made from the entire wheat, except the hard silicious coating of the berry. Every nursing mother should eat entire

wheat flour because wheat embraces all the elements of nutrition necessary to build up and sustain every part of the system, keeping it in good working condition and preserving it unimpaired to ripe old age. With this natural food at command no nursing mother should permit her child's bones to be improperly nourished.

FOOD NECESSARY FROM THE SIXTH TO TWELFTH MONTH.

During the second six months of the child's life, food rich in nitrogen should be given it. If nursing, the mother should give special attention to this point. If the child is feeding, then the food should be rich in nitrogenous elements.

The child develops rapidly during this period. During the first six months the organs were maturing, but now growth is apparent at all points, tissue is wanted for muscle and bone. The digestive organs are now vigorous and usually able to take care of pure milk.

After six months the milk may be boiled unless there be constipation. For constipation add a little strained, well-cooked oatmeal gruel. It should have five meals a day; two of which may be milk thickened with flour porridge or a teaspoonful boiled flour, or a tablespoonful of pearled-barley jelly. A teacupful of beef tea, or the yolk of an egg beaten up in a teacupful of milk may be given once a day for a change. Two of the five must be pure fresh milk.

A child six months old will seldom digest more than two teaspoonfuls of the boiled flour-ball in the twenty-four hours, and in many cases half that quantity will

be sufficient. One teaspoonful of this powder is rubbed with a tablespoonful of cold milk into a smooth paste, continuing the rubbing until all the lumps have disappeared. A second teaspoonful of cold milk is then added and the rubbing is repeated until the mixture has the appearance of a perfectly smooth cream. A quarter of a pint of boiling milk, or milk and water is added, slowly stirring all the time, and the mixture is ready for use.

If the above be found not to agree, a smaller quantity should be given, or if necessary, some other farinaceous, or well-cooked starchy food should be tried. Gerber's, Horlick's (Liebig's), Nestle's, Neave's, Ridge's Food, Prolactea, or Imperial Granum, or strained oatmeal, etc., may be used. Sometimes one, sometimes another, will be found to succeed, but in no case should clear farinaceous food be given oftener than twice a day.

Pearl barley boiled for six hours forms, on cooling, after the water has been strained off, a jelly which dissolves readily in warm milk.

If there be constipation a teaspoonful of fine oatmeal may be substituted for the other farinaceous food. This may agree with the child, given with the milk.

Beef tea may be given occasionally prepared as follows: Put one-half pound (or one pound according to strength required), of fresh lean beef, cut into small pieces, into a covered bowl with a pint of cold water and a pinch of salt. Put it in the oven and let it simmer gently for two hours. Skim well and serve.

When not served at once, it must be kept in a cool place well covered. In re-warming beef tea which has been allowed to cool, care must be taken to warm the tea up to the point at which it is to be served and no higher. Only warm as much as is to be taken at once. It should on no account be allowed to boil. This may now be given once or twice a day unless it makes the bowels loose. In that case the barley may be used alternately with it.

For a weaned child above nine months old the following arrangement may be adopted.

The first meal, 7 A. M., a breakfast-cupful of Horlick's Food, prepared as directed on the tin, or some other food. If the bowels are confined at any time, a rather larger proportion of the Food, and less of the milk, should be used ; or the reverse, if the bowels are relaxed.

The second meal, 10:30 A. M., a breakfast-cupful of milk. A teaspoonful of lime-water may be added when the milk has appeared to produce discomfort.

The third meal, 2 P. M., the yelk of one egg, well beaten up in a teacupful of milk.

The fourth meal, 5:30 P. M., same as the first.

The fifth meal, 10 P. M., same as the second.

Or to alternate with the above, at the first meal, 7 A. M., a dessert-spoonful of pearl-barley jelly dissolved in a breakfast-cupful of warm milk, and slightly sweetened with loaf-sugar, or a small bowlful of milk-porridge, may constitute the meal.

The second meal, 10:30 A. M., a breakfast-cupful of

milk, to which, if necessary, a teaspoonful of lime-water is added

The third meal, 2 P. M., this may consist of a small egg-pudding, made as follows: Beat up one egg with a teaspoonful of flour and sufficient milk to fill a basin rather larger than a teacup; tie the basin and its contents in a cloth, and boil for twenty minutes. It may be taken with a little milk, sugar, or gravy. As the child grows older, more flour may be added. Or the meal may consist of a small teacupful of beef-tea (half a pound of meat to the pint), and a rusk or piece of stale bread.

The fourth meal, 5:30 P. M., a teacupful of Mellin's Food, carefully prepared as directed above.

The fifth meal, 10 P. M., same as the second.

A healthy child between ten and twelve months old will require from a pint and a half to a quart of milk in twenty-four hours. It should have nothing between meals except a drink of water now and then. It should now sleep all night without food. A growing child needs plenty of water.

INFANTILE FOOD FOR SICK CHILDREN.

When grown persons are sick we put them on infant food, but such a change is not often made with a child taken suddenly ill. It is my rule to put a sick child a year or more old on the most infantile food I can get. The nature of the sickness will decide which food it will be. Few sick children need food when taken suddenly ill. They are often very thirsty, nervous, fever-

ish and restless, and instead of giving them water they are usually fed. The digestive organs as a rule are not able to take care of this food, and it is usually vomited—to the alarm of friends and the aggravation of disease. Feeding a sick child with its ordinary food is often a mistaken kindness. Food should be suspended for a time or only given in small quantities and at long intervals. Sick children, like many well children, are very often overfed.

If mothers would heed this advice and not nurse their sick infants, when ill, there would be much less sickness. The longer the milk remains in the breast the more watery it is, and therefore the better for the sick child. If the mother gets very nervous, she better not nurse her infant until the nervous fear has passed off and she has pumped out the milk. If the child is to be sick a long time, the mother's milk should be kept watery by her drinking large quantities of water, unless the nature of it's sickness demands small quantities of fat food. With fed children the quantity can be easily regulated.

FOOD FROM TWELVE TO EIGHTEEN MONTHS.

Children whose chief food has been milk during the second six months, should now during the third six months of its life take about five meals a day, and nothing during the night. The first meal may be milk with whatever agrees with it. Oatmeal, barley, flour, or one of the prepared foods. The second meal should be light and then it should have a nap. Then should

come a good substantial meal, then the next two should be light, usually milk or food made less heavy than usual, a hearty meal at night will prevent sound sleep.

A healthy child of a year to eighteen months old, will usually take between two and three pints of milk in the twenty-four hours. Some children take larger quantities than others at one meal, but if the meals are made very large, their number must be reduced in proportion. Many children between twelve and eighteen months old will do very well upon only three meals a day. A healthy child eighteen months old should sleep from 6 P. M. to 6. A. M., without waking. The sooner a child becomes accustomed to sleep all night without food the better. When, however, he wakes in the morning, refreshed by his night's rest, he should never be allowed to remain fasting for an hour or more. A drink of milk or a thin slice of bread and butter should be given at once.

The first meal at 7:30 A. M. (or as soon as child awakes) may be a slice of stale bread well soaked in a cupful of new milk.

The second meal at 10 A. M., a drink of milk; a plain biscuit or a slice of thin bread and butter. Now it should take a long nap.

The third meal at 1:30 P. M., a teacupful of good beef tea with a slice of bread; a good tablespoonful of light farinaceous pudding, and baked potatoes.

The fourth meal at 5 P. M., same as first.

The fifth meal at 10 P. M., (if required) a drink of

milk. If the child is restless at night omit the last meal, giving a drink of water instead.

Some children may need the following:

For the first meal, as soon as he wakes, the yolk of a lightly boiled egg, a slice of thin bread and butter, and a cupful of new milk.

The second meal, a drink of milk, or a slice of bread and butter.

The third meal, a mealy potato well mashed, moistened with two tablespoonfuls of good beef gravy, and a cupful of new milk.

The fourth meal, a slice of stale bread well soaked in a breakfast cupful of milk.

The fifth meal, (if required), a drink of milk. The fifth meal at 10 P. M. should never be given unnecessarily.

Many will do well on three meals a day, as follows:

For the first meal, on waking, a teaspoonful of fine oatmeal, three-quarters of a pint of milk and a little white sugar.

The second meal at 1 P. M., the same with the addition of the yolk of one egg and potato.

The third meal at 5 P. M., same as first.

In this diet the flour and the eatmeal are first beaten up till smooth, with four tablespoonfuls of cold water, and are then boiled. The milk and sugar are then added, and the mixture is boiled till it thickens. For the second meal the yolk of an egg is stirred up in the saucepan, and boiled with the rest. The child should have plenty of potatoes for the noon meal.

FOOD DURING THE "SECOND SUMMER."

As most of the children are born in the spring of the year, they reach their second summer usually during this third six months of age. A child usually cuts six teeth during this time, *i. e.*, the lower lateral incisors, and the first four molars. This second summer is a time of special dread to many mothers. Some attempt to nurse them through this time, but as few mothers have a quart of milk they are not able to satisfy the demands of the system. Some are afraid to feed them, and the consequence is that they steadily emaciate. The mucous membrane gets red, denuded of its epithelium, and the submucous coat takes on inflammation, and in this way many a case of summer complaint (see Entero-colitis) arises. The difficulty of curing such cases arises from the impoverished condition of the system. There is a better way to manage these cases than this. The mother should anticipate this emergency and prepare for it. If her child is feeding, as it should in addition to the breast, it will be in a good condition when the second summer arrives. Now if the mother finds that she is entering upon this time with enfeebled health and scanty milk, she will sensibly feed her child entirely, and not give it breast milk that does harm to say the least, rather than good. The more nervous and fearful the mother is about this season, the less is she in condition to nurse her infant.

A child that is fed should be carefully watched during the months of May and June and the effects of the food

should be carefully noted. The food that agrees should not be changed now except for the best of reasons. The food for this reason does not differ from that of a child of the same age in winter needs. If it is made ill by sour food or a sudden burst of hot weather, getting overheated or chilled at night from lying in a draught, then it should be carefully treated, in the meantime the food may be suspended, or a more infantile food used until the illness is controlled, then it should be gradually put back upon its original food before the ill attack. The point of watchfulness is that the child is not fed with articles beyond its digestive capacity, especially tart articles. It should have nothing between meals.

FOOD FROM EIGHTEEN MONTHS TO TWO YEARS.

The food needed during this period of the child's life does not differ from that of the foregoing period. For some children the food there given may be much too old as it is adapted to the most vigorous type of infants. It may need almost an exclusive milk diet until it is sixteen months of age, and only milk may agree even when it is twenty months old. As this stage is often during the warm summer and autumn months, care will need to be observed that it is not put on food too strong. During the cool months when digestion is vigorous, it may be advanced more rapidly. But it should be remembered that regularity of feeding will go far toward keeping the child in health. It should be fed to the minute.

The first meal, 7:30 A. M., may be a breakfast-teacupful of new milk. A rusk, or a good slice of stale bread.

The second meal, 10 A. M., a cup of milk.

The third meal, 1 P. M., may be a small slice of underdone roast mutton, one well mashed potato, with a little gravy as it runs from the cut surfaces of the joint, without fat. If the child bolts his meat, it should be cut fine till he can be trusted to divide it with his teeth. For drink, water, or milk and water.

The fourth meal, 6 P. M., a breakfast-cupful of milk and bread and butter. A healthy child, after the age of eighteen months, should sleep from 6 P. M. to 6 A. M. without waking, and require nothing beyond the above.

A child the same age may require at the first meal, 7:30 A. M., a breakfast-cupful of new milk, the lightly boiled yelk of one egg, and a slice of bread and butter.

The second meal, 10 A. M., a teacupful of milk.

The third meal, 1 P. M., a breakfast-cupful of beef-tea (a pound of meat to the pint), containing a few well boiled asparagus heads, when in season, or a little stewed flower of broccoli, or other vegetables After the beef-tea a good table-spoonful of plain custard or farinaceous pudding.

The fourth meal, 6 P. M., bread and butter, with a breakfast-cupful of milk.

These may be given on alternate days, or otherwise varied as necessary.

During the heated term in June, July, and Au-

gust, the heartiest meals should come in the morning. If the supper or afternoon meals have been light, it will usually have a vigorous appetite for breakfast. It may be necessary to give it a small cup of milk at six if it is awake, and then be taken to the table to take its breakfast at 7 30 A. M. This meal should be hearty. The ten o'clock meal may now be very light, and it should now take its nap. The room where it sleeps, should be secluded and cool, so that it will sleep sound, and arise refreshed.

FOOD FROM TWO YEARS OLD AND UPWARD.

Between the ages of two and three years the same diet may be continued. Meat may, however, now be given every day, and a little well stewed fruit, marmalade, etc., be occasionally added to the diet.

The morning and evening meals should always consist principally of milk. Tea and coffee should be entirely withheld from young children. Indeed, these beverages are better not given at all, at least not till after adult age. Cocoa, however, is a suitable beverage at any period of life.

There is a great tendency in America to get young children onto adult food. Many a child loses flesh and does not develop properly during the next four years of its life. At thirty months all of its teeth are cut and then the long bones take the phosphate of lime from the food. There are no articles of food that contains so much of this element as milk, oatmeal and entire wheat flour; these the child should eat for years.

A healthy child should have only three meals a day and no more. Milk should form a part of each meal. Food acid or sour should not be given children. The child should eat hearty at the two first meals, and should have nothing between meals but water. A red tongue is an index of stomach trouble that demands prompt attention.

The morning meal should consist of oatmeal and milk, potatoes, bread and butter. The child should now eat hearty especially in warm weather. If it has had a light supper and slept well it will have a good appetite.

The noon meal should be the heartiest, and should consist of meat, potatoes, vegetables, soup, etc. The drink should be milk, or milk with warm water, taken with the food, or after it, and never before, nor some time after eating, as it arrests digestion.

The evening meal should be light, consisting chiefly of bread and milk. Cake and sauce, unless ripe, sweet fruit, should not be allowed children, and especially at this meal.

The child should retire early, about 7 P. M., have no excitement after supper, as that will interfere with early and sound sleep.

Regular habits especially in eating should be early learned. The earlier the better. A child that has its own way the first year will want to do as it likes all the rest of its life. How often do the thoughtless infringe on this rule.

A young mother said to the lady who cautioned her about feeding her child indiscriminately, "My child

shall have just what it wants." What kind of a child has she? The report is, "it is very cross, crying half the time, and seems very clumsy on its feet. It is fed anything and everything, at any time of the day or night, and then whipped to make it mind." This child suffers with dyspepsia, and I judge a progressive hydrocephalus. It is perhaps needless to add that it is her first child. If that child survives it will be apt to suffer for years with chronic gastritis—a form of trouble very common among growing children, and almost entirely overlooked.

The child is now three years old and suffers as indicated. (See Chronic Gastritis.)

It is difficult to get children to eat oatmeal or graham or anything that they should eat, and soon they get fed with anything on the table, and for drink are allowed coffee and tea. It is becoming quite popular to have oatmeal once during the day. With some it agrees best at night. Whole wheat gems sweetened, is a form of substantial food that children take to kindly and relish. They should be eaten at the meals. No food should be allowed between meals. The friends of children should know that it is harmful to give them anything between meals to eat. Children should not be indulged freely at the table. I do not advise that they be banished from the table, but that parents exercise a judicious control over the food allowed. Potatoes, bread, butter and vegetables may be allowed freely. Meat should not be given to any amount, it is too stimulating. Soups and gravies, unless very fat, should be

freely allowed. For drink, milk and water is the best. Cold water chills the stomach and retards digestion and is therefore not good to take with the meals, but it may be given freely between meals, except when the weather is very hot and the thirst is inordinate. The evening meal should be always light, and the children should be put to bed early. Regular eating and sound sleep ensure healthy, happy children.

ABOUT FEEDING BOTTLES.

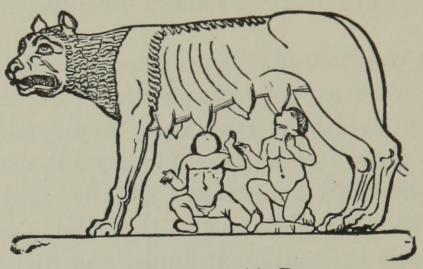
How an infant takes its food is often quite as important as when it feeds and what it eats. Perhaps one of the most puzzling questions for the young mother, who must feed her infant, to decide is, what kind of a bottle to use, or whether to discard all bottles and feed it with a spoon. Each old lady friend has an idea of her own, the druggist possibly advises the bottle he has on hand, or perhaps gets the best price for, while physicians have their preferences, and often substantial reasons therefor. The age of the child helps to decide the choice. These various ideas and the ingenuity of makers have produced a host of "feeding bottles." We will examine their respective merits, then the mother can choose intelligently for her particular infant. The infant's mouth was designed to nurse, as we have seen, and it should therefore enjoy its privilege.

Many singular nursing apparatuses have been used. The ancient "sucking rag" was doubtless the vehicle by which milk was conveyed into the mouth of the infant. Later this was attached to a horn into which

the milk was poured. The ancient bottles of the skin of animals were a convenient article for feeding a child. In Russia, to-day, it is a common practice to cut off a teat of a slaughtered cow, and attach it to the horn, and to feed the child from that. This is used for months. It is perhaps needless to add that the mortality among such infants is simply enormous. In early times and in some countries to-day, the child deprived of its mother's milk is applied directly to the udder of a convenient animal, as goat, sheep, cow, or even mare. Seguin on Idiocy, records several instances where children have escaped and lived among wild animals, and who have become like them in habits. The only instance where children fostered by wild animals have amounted to anything, if mythology can be credited, is in the case of Romulus and Remus, the founders of Rome who were nourished by a female wolf. The lesson to be learned is that a child *can* be raised on any kind of milk taken through any kind of apparatus.

Nursing bottles may be divided into two grand classes: (1), those with a rubber cap, and (2), those with a long rubber tube and mouth piece. There is another division: Those that are strait and those where the neck is bent. There are also two kinds of rubber used, the white and the black.

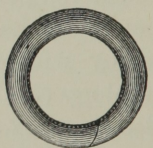
Of the cap nipples there are quite a variety, some are large, long and pointed, others rounded like the end of the finger, and others again, long and small. Some are smooth inside and out, others have ridges on the inside so as to facilitate cleaning. This is the form of the long



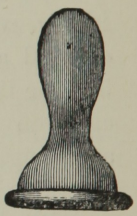
[From a monument in Rome.

FOUNDERS OF ROME NURSING A WOLF.

COMPLETE NURSING APPARATUS.

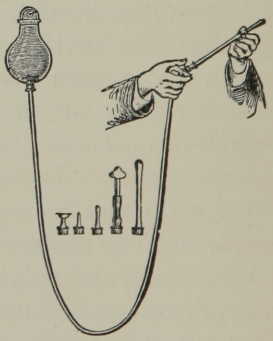


TEETHING RING.
(p. 228.)



CAP NIPPLE.

SATISFIED.



FOUNTAIN SYRINGE.
(p. 275.)

small cap. Some are made of soft rubber, and others of quite hard rubber. Some are made of white rubber, others of clear yellow, others again of smooth black, while others still of coarse black gutta percha.

There is also a plug nipple that fits into the bottle. The smaller the child the smaller and shorter and more soft the nipple is the better. The long small cap with ridges inside is one that fulfills this discription best, although the short small cap now made answers excellently. As the child grows older the nipple may be larger, although if too large it developes the cheek muscles, giving the child the appearance of having something in its mouth. The hole in the end of the nipple should not be large, or the child will get the milk too fast. If too small, its efforts at suction will tire it out, making feeding a source of annoyance and dread to all. The cap nipples require skill in drawing them that the infant learns slowly. It draws, and the air is exhausted, and the milk does not flow. It opens its mouth to cry, and out comes the milk and chokes it. By and by it learns that it must open its mouth at the end of every draw to let the air in. In doing this it loses some of the milk. An older child soon learns the proper method of drawing a cap nipple, but a young infant makes bungling work at it. For that reason cap nipples are not popular with the little folks. A vent-hole is sometimes made in the cap near the bottle, and then it draws easy enough. But now arises a new difficulty. All cap nipples are made with a large hole so that the milk will leak out drop by drop. When the

vent is made it runs out too fast. To obviate this a piece of sponge is sometimes inserted into the cap. This needs special care, or it gets sour and the child sick. The bottle with the cap has to be held to prevent the nipple from going down its throat, making it gag, and throwing up all its food, unless a very short nipple is used.

The other variety is a rubber tube of about ten inches long. At one end is a glass tube of about five inches, to go into the milk, and at the other is the mouth-piece and shield. The long tube and mouth-piece make nursing more of a normal process, for the nipple is smaller and there is usually a vent-hole for the air to get in and thus facilitate suction. Again, the nipple or mouth-piece with shield is easier to manage by an infant. There is an objection to the long rubber tube that it is hard to keep clean. That is true. A long wire with a brush at the end is furnished to clean the tube from any debris of milk. The glass tube is valuable for two reasons: first, it keeps the rubber out of the milk, and second; we can observe if the suction is continuous or spasmodic. Usually there is a piece of rubber at the lower end of the glass tube to protect it from violent friction against the sides of the bottle. This piece I always order removed. Ordinary care will not break the glass tube, and the rubber contains so much Sulphur that it hastens decomposition in the milk. The mouth-pieces of this variety differ quite as much as do the cap nipples. They are of all shapes and sizes, some large and

long, others broad and short; some hard and others soft. There is a great difference in the holes in the ends. Some have two or more fine holes, others have only one large hole, while some are made with slits made in two directions. Where the nipple joins the tube there is a shield to prevent the nipple from going too far into the infant's mouth and choking it. For the young child a small-sized, swan-bill, short, soft nipple should be selected. As the child grows older it should be larger and harder. If it is too short the child cannot get hold of it properly, and its efforts to hold on interfere with suction. The difficulty with the long soft nipple is that, as it is drawn out, the edges come together and no milk can get through. Then as the child grows older and the teeth appear, or when they are coming, it bites the nipple and soon spoils a soft one. If it is hard, it becomes like the mother's nipples after she has nursed a time, hard at the end.

There are four kinds or colors of rubber used in making nipples, either for cap or tube:

(1.) White rubber. This was formerly bleached or colored with Sulphide of Carbon, but is now colored with some other material. A good deal of Sulphur is used. These nipples soon make the child's mouth sore, especially when first used, and have been set aside by the medical profession. If no other can be obtained they should be well washed in water, soap and water, before using. This will carry off much of the Sulphur and tend to smooth the rough surface. They should

be used at once, and as soon as possible put into water that contains Soda.

(2.) Black rubber. Nipples and tubes of this color next came into general use, and as they contain less Sulphur were deemed less objectionable. This rubber seems less tenacious than the white, and soon softens and falls to pieces. It should be kept out of hot water, and should be well washed and dried.

(3.) Pure rubber is sometimes used to make nipples and tubes, but they are so soft and elastic that they last only a short time, so that they are not extensively used. They were made at the instance of the profession, who object to any foreign matter whatever being put into an article that a child uses so much. The chief objections to them were that they were so elastic as to flatten and prevent suction, and so thin as to tear readily. They might be made heavier, and would then be the model article. If possible pure rubber nipple and tube should be obtained for the infant, even if the expense is a little more. The demand will soon create a supply. One advantage of pure rubber is that the nipples may be turned inside out and either side used by the child. The hole is apt to become large in these from the constant stretching.

(4.) Maroon nipples is a colored rubber which closely resembles in color the pure rubber. It is harder and not so elastic. Just what the coloring matter used to give the maroon color is, I have not been able to ascertain. Great pains has been taken in its manufacture. It is smooth on both sides and the hole is made

so that saliva or anything else cannot be forced into it while the child is nursing. If the pure gum cannot be obtained the maroon nipple should be used. Many will try to palm this off on the people as pure rubber, but remember that pure rubber is translucent.

The shields are of two kinds, horn or ivory, and white or lacquered wood, making them look like hard rubber. White horn ones are the best, as they do not absorb so readily nor foul so easily.

For stoppers to the bottles there is a great variety. Some are made of wood and cork, porcelain and cork, glass and rubber, wood and rubber or maroon (pure) rubber. The latter are made like a cap nipple and fit the neck of the bottle while the tube passes through it. They are called by dealers " universal maroon fitting." There is a vent-hole in this rubber cap that allows of air passing in to aid the easy extraction of the milk. The simpler the stopper is the better. Cork is apt to get filled with stale sour milk. Rubber changes the milk it comes in contact with. In order to obviate this objection a glass stopper is made, so that the contact with the milk is almost wholly glass. The one with the rubber-cork is made with a valve to facilitate easy and natural nursing.

Of the bottles there are quite a variety. They hold from eight to twelve ounces. For the cap nipples a long narrow flask-like bottle is made. But if a small cap nipple is used a common eight ounce bottle can be used. If the " universal maroon fitting " is used it may be put onto almost any bottle. The bottle should

be short so that the end of the glass tube reaches to the bottom.

Most of the bottles that have the long tubes are bent at the neck. This enables them to be laid on their side, and the child can nurse at its leasure. The bent-neck nursing bottles are to be preferred. The shorter they are and the larger the mouth the better.

The care this nursing apparatus needs, is sometimes it would seem, beyond the comprehension or ability of some attendants. The bottle and all the fitting should be cleaned as soon as they are emptied by the child. The practice of allowing the child to nurse itself to sleep on the empty apparatus is a bad habit that should not be learned. If the milk flows too rapidly so that the bottle is emptied in a few minutes, change the nipple, and get one less easy to draw; or, the tube may be gently compressed so that nursing will occupy fifteen minutes, and by that time the child should be asleep if it is "his sleepy time." The bottle should be thoroughly rinsed and filled with cold water, or put in a pan of water that contains a pinch of Soda. The nipple should be taken off and turned inside out. The tube should be taken off and washed out with the brush. The cork and other connections should be carefully cleaned. All should be kept in water until needed. To warm it the bottle should be filled with hot water before the food is put in. The nipple and tube should be removed often. With this care no trouble need be feared from the bottle.

WHEN TO TAKE THE BOTTLE AWAY.

There is often a temptation to let the child have the bottle until it is quite old. Just as there is a disposition for some mothers to nurse their children until they are two or three years of age. In some warm countries it is the habit to nurse the child a long time. This may be done for two reasons: first, because this is the easiest and best way to feed a child when the food for adults consists largely of coarse bread and fruits, and second; because long nursing as a rule prevents conception. Some mothers would rather nurse the child for this latter reason, even if they knew they were slowly killing the little thing, rather than wean it. There are other ways of preventing conception that have no crime attached to them, which a physician can give those husbands who need this sort of advice. With the fed child there are no such contingencies, and we can calmly consider the best time to take the bottle away and feed it entirely. The object of the bottle was to enable the infant to get its food in the most easy and natural way. A child sucks its food in small quantities, slowly and quietly, until it is satisfied, *i. e.*, its stomach is full and the mouth tired with the effort at suction. It will be noticed that the child nurses spasmodically, takes two or three draws rapidly and then rests a few moments and then resumes again. When it begins to swallow it rapidly in mouthfuls then it should be fed by the spoon. Some mothers find that with a long-nosed teaspoon they can feed their infants quite as well as

with a bottle. It needs only patience and judgment to feed a child in this way. The great temptation is to hurry the feeding.

The child should at about twelve months, at least, have the bottle taken away, that is if the teeth are well advanced. When the first molars appear the shape of the jaw will have greatly changed. The roof of the mouth will have become more vaulted so that sucking will be difficult. If it must take the bottle after twelve months, the nipple should be large enough so that the vault will be more than filled. If possible the bottle better be taken away in the spring months, but if it reaches the above age or fifteen months in the fall, then the bottle better be taken from the child. It should by that time learn to swallow from a cup. This process facilitates the development of the palate and the tongue muscles, and without doubt enables the child to talk earlier and more distinct. But this does not always follow, for talking is a mental process, as we shall see.

The best time to take the bottle away, then, is between nine and twelve months of age, and the spring of the year if possible. But there is no great objection to its nursing the bottle till fifteen months or more, and then taking it away in the fall or winter.

I cannot close this important chapter of artificial feeding without a word of caution. No mother should hastily catch up this book and adopt the first thing her eye meets. The intelligent mother will first ascertain if possible the kind of food needed by her child, hav-

ing carefully compared Chapters IV. and V. with this one. If she is not able to decide, call in the aid of a physician who can carefully analyze a case. There should be some one in every community who can tell what food a child needs—not what they guess that it needs. Then she should as carefully select the food adapted to the case, and the directions given should be followed closely. If the food disagrees and does not satisfy the child there is no use of trying very long with the hope of a change by and by. Many a child is sacrificed because the mother hoped it would be all right soon.

Prompt, watchful action should govern the mother when a change of food is necessary.

CHAPTER VIII.

CAUSES OF ILLNESS AMONG CHILDREN.

The most common cause of sickness among children is without question, errors in feeding. But there are other causes, and it is our duty to learn of all these that we possibly can.

Medical men divide causes of disease into predisposing and exciting, *e. g.*, an acid child is predisposed to colic and green diarrhœa, but a bottle of sour milk may excite so severe an attack as to prove fatal.

Predisposing causes may be climatic, national and constitutional, while the exciting causes are many, chiefly atmospheric, hygienic and dietetic. Let us first glance at the

EFFECT OF CLIMATE ON CHILDREN.

The diseases that an infant may inherit from its parents have received considerable attention. The effects of climates have been studied somewhat, especially upon puberty, but little or no attention has been given to the consideration of the effects of locality upon the development of infancy and childhood.

"Climate affects the body as it does the individual cell. Cold causes contraction of the cell and retards reproduction. Heat with moisture tends to induce expansion and to hasten reproduction. The warm, damp climate is equally relaxing to the entire animal system,

giving a laxity of fibre, a heavy phlegmatic temperament, and a lowering tone and vigor. The arctic climate causes shrinking of the surface and a dwarfing of the entire body, though within certain limits cold braces and gives a closer texture, a better tone, and an increased vitality. A temperate or genially warm climate with a dry atmosphere is alike favorable to perfect bodily development, a vigorous nervous temperament, and an elevated tone and vitality. This is abundantly evident in the cases of horses." (Public Health Reports, Vol. II., p. 244.)

Native soil we know has a preponderance of alkaline elements but the effect of constant cultivation is to render it sandy, acid, and capable of raising only sorrel and ants—or medically speaking oxalic and formic acids. Healthy children we found have also a preponderance of alkaline secretions. Children raised in a new country on new land, are large, healthy and strong; the bones, tendons and muscles are all well proportioned; if the region is dry, the child will grow up tall, strong and active as a Sioux Indian. If the locality is moist, the child will be rugged, squatty and gross like the Dutch. If there are seasons of rapid evaporation chills will be apt to soon shake off what little fat they may acquire. In sandy soils there is a tendency to necrosis; in limestone regions to exostosis; in clayey sections the tendency is to mollities ossium.

In the sandy sections there is feeble development of the cartilages, for bone forms early. In limestone regions the cartilages are very large. In clayey sec-

tions there are large cartilages but they are soft and immature. The same facts will be, no doubt, observed with the muscles and connective tissue. The envelops of the milk globules of the mother will present the same varieties. In alkaline subjects living on alkaline food, digestion will be difficult unless much fat is also taken. This explains why bacon, butter, etc., are craved in frontier countries. A lymphatic (Calcareous) child will devour a bacon rind with avidity; while an acid infant craves sweets, etc. The alkaline child raised on limestone or clayey soil will have much indigestion, and many worm symptoms, and may pass long round worms (ascaris lumbricoides), while the acid child, raised on sandy soil, will pick its nose and pass quantities of pin worms (ascaris vermicularis), every month, about new moon. The acid child is always hungry and has a hungry look. The development of the nervous system is markedly effected. In the acid subject in the sandy section, the lympathetic system is most actively developed. While in the alkaline one, the cerebro-spinal system is best developed. Cerebro-spinal meningitis is most frequent in alkaline sections and in alkaline subjects, and is induced by cold and a flushing up by Carbonic acid. Acidity gives rise to congestions. This is a marked peculiarity of the Irish constitution, that craves starchy potatoes which are soon changed into sugar, then into acid. Alkalinity tends to anæmia by the rapid transfusion of the white blood into connective tissue, muscle and bone, as well as by its effect to saponify the fats. (Soaps are oleates of

Potassa or Soda). In the alkaline subject there is a tendency to hernias, hypertrophies of heart, open fontanelles, and to dropsies. The acid child matures rapidly and is small. The Bush men living in a carbonic acid gas section under the burning rays of actinic light (intensely acid) are a good illustration. The alkaline child develops slowly. If excessively alkaline it is usually classed as a dunce, but often develops into a smart man.

The effect of cultivation changes the character of the food grains; they become more starchy, and contain less of the muscle and bone-making elements. This is brought about by the more rapid evaporation in cultivated soils and the abstraction of the alkaline elements, lime, potassa, alumina, etc. The effect of the food loaded with starchy elements is to hasten development, and this is largely responsible for the degeneracy of the American people; we grow weaker, if not wiser. We can retard this degeneracy by insisting on our people taking more alkaline food and especially water which is loaded with the alkaline elements. Hard water is not acid, but water loaded with lime, and to use it for cleansing purposes this must be precipitated, then the potassium or soda can unite with the grease, and form soap, and the dirt is dissolved away. In populous cities one great cause of infant mortality is the acid nature of the air. It is loaded with carbonic acid which tends to produce congestions, prostration and death. Another fruitful auxiliary is cold. Much carbonic acid in the system lowers the temperature and

thus increases fatality. Dirt is healthy, but when mixed with fat on the surface of the body it not only retards the exhalation of carbonic acid gas but becomes rancid (soui), and thus poisons the life of the child. Too much washing carries off immense quantities of epithelium, and if much soap is used much fat is also dissolved out of the body so that the child becomes anæmic and debilitated as much as if it had a profuse expectoration. It is the average cleanliness that is next to Godliness. One cause of the tanned look of young children on the frontier is due to the soft (Potash) soaps used. Another is the character of the food and the exposure to the rays of the sun, and force of the winds. These abstract moisture and then the skin is thickened—the layers of epithelium are increased.

While the effect of an alkalinity of system is that of health, still too much alkalinity in food, or drink, or locality, as is found on the plains, is certainly detrimental to health. A case in point. A large, well-proportioned man, went west to supervise the laying of the Union Pacific railroad. He had a good appetite but soon began to complain of irritation of the skin, and finally a large crop of boils made their appearance. They were so annoying as to induce him to return to Chicago. He also had a troublesome diarrhœa. The boils were very large and discharged quantities of bloody pus. He became thin in flesh. He soon recovered under the action of Hepar sulphur, and took on flesh enormously, till now he weighs over two hundred pounds. I look upon

this case as one of hypertrophy of the lymphatic system, due to the presence of so much alkaline salts, as are found on the plains. The superficial lymphatics of the skin began to suppurate, while those of the mesentery refused anything to pass them, hence the diarrhœa and the emaciation. What will be the effect of the region of the plains upon the development and diseases of children, I am curious to learn. The effect will be very marked in growth, and especially during dentition, and in the hot months.

Physicians who have made special observations on the difference between American and English children, report that the children in England are more substantial, thick set and less bright and active. Now to what is this due? Some might think it is due to the constitution. But we all know of such families, after a few years residence in certain sections of this country who have degenerated as rapidly as any native American. Some might assign the change to different habits of life but we know none are more tenacious of "the good old ways" than these very people. This question has puzzled none more than these English-born American citizens themselves.

Let us compare the climates. England has many rainy days and little sunshine. America has much light and little rain. England has an equable temperature. America has very changeable seasons. The effect of these influences upon grain is apparent. In England it grows heavy and matures late. In America it grows light and matures rapidly. The same

rule must hold with the vegetative life of the infant. The equable temperature of England has its equable mental as well as its physical effect. There is a marked changeableness in the workings of the American nervous system. Then there is another element to consider. With more light there is also more summer heat, and especially does this apply to the Mississippi valley.

The shape of this valley tends to convert the atmospheric lens, which is concavo-convex, into a double concave lens, which, as you know, is one of the most powerful decomposers known. The mountains on either hand tend to concentrate the rays which are reflected up the valley at a very acute angle. This fact alone would account for the high temperature far up this valley. The mean temperature for the year 1870, was the same (40°), in Chicago, Clinton, Iowa City, Des Moines, Omaha, Sioux City, Yankton, Fort Randall, and Fort Benton, which is within seventy miles of the British line. The latter place is 7° (over 450 miles), north of Omaha, and 15° west. Fort Benton is almost due northwest from Omaha and distant over a thousand miles. Dr. Stillman, of Council Bluffs, Iowa, reports, "the sun's rays are almost blinding, even late in the afternoon." He says that they have more wind than any other place he was ever in.

The region of the lakes, and especially Canada, is kept at a more equable temperature. There is more moisture, more cloud, less sun and a higher standard of health. Children develop better.

Michigan from its very position is and ever will be a very fruitful state. The only drawback it has is the prevalence of intermittent fever. Cultivation, however, will do for it what it has done for Great Britain during the last century.

Indiana is in the line of the division of the southwestern storm tracks, one branch going east and the other northwest. This state is undergoing a transition, as is all of the northwestern states.

Ohio has about reached a standard that will be maintained for many years. There is little wild and swamp land in the state. It is the most dry of any state east of the Mississippi, if we except Pennsylvania. The prevalence of gastric fever, in the fall months, in the northern part of this state, is significant of the dry state of the atmosphere. The tendency to gastro-enteritis in summer, and pneumonia in winter, in children, can almost be reckoned upon with certainty.

Illinois is dryer than Indiana, and except along the river basins, has not as much ague. The portal circulation is better, but we also encounter the tendency to gastro-enteritis as is found in Ohio. The storm trend is longer, therefore there is more wind.

Iowa is a new state, has much new land and is being rapidly drained, and will be dryer than any other state in the northwest, east of the Missouri river. It has, however, a large amount of rocky bed, which will keep it alkaline and make it a good state for children for some time.

Wisconsin occupies a peculiar position; bounded on

the north by lake, on the east by lake and on the west by river. It has had much swamp land, which would have rendered it very unhealthy if it had not been for the prairies at the south, and the large sandy section throughout the state. It is a very prolific state—as shown by a case of five children at a birth, having recently occurred in Watertown. It will not produce large, heavy adults, mentally or physically, but the peculiar Wisconsin constitution will be active with practical minds. There is a diversity of soils which will show its effect upon the people.

Minnesota is a state that is finely located for vigorous growth and development. It has much new land; much surface water; a heavy soil; long amount of cool weather and sudden bursts of hot weather. Still, it has a clear sky, which gives much sun and cheerfulness, and tends to develop the nervous energies. The effect upon children, is to draw from their proper nourishment, by the great activity of parents. I am not surprised to learn that they have much typhoid and much cholera infantum. Pneumonia and croup (inflammatory) are very prevalent in the cold months.

Missouri is watered by several large rivers, has much timber and very much surface water in the south and west. The northwest is more dry. It is warm and perhaps more equable than any other state in the valley. It is essentially a nursery, as proved during the slavery period. There are all the conditions to favor the vegetative system. Chills, due to derangement of the portal circulation, and marasmus will indi-

cate the disease tendencies and the difficulties of development.

Kansas is a dry state, and whether sandy or not, it will be eventually, unless great attention is given to adding moisture and alkaline elements (water and manure.) Here we meet to a greater extent than in any other state in the Union, the marked acid constitution. The sympathetic system is rapidly developed, so is the osseous system. The tendency is to inflammatory disease of bowels and lungs. Kansas inflammations differs from those of Minnesota, in this, that there is more venous congestions. Minnesota inflammations call for such an active agent as Aconite, while in Kansas Gelsemium will be oftener indicated.

Nebraska is like Iowa, with less moisture. It is colder than Kansas, and consequently there must be a more even development of the nervous systems.

Colorado is dry, and cooler than Kansas and warmer than Minnesota. Although it will prove a good state for recruiting over-taxed nervous energy, in consequence of its altitude furnishing so much ozone, still, I do not expect it to be noted as a child-raising state, at least, after it has been cultivated to any great extent. There is too much cerebro-spinal activity and not enough activity of the sympathetic system.

In all the southern states in this valley, Kentucky, Tennessee, Arkansas, Mississippi, Louisiana, Texas, Florida, Alabama and Georgia, if we except the high land portions of Tennessee, Kentucky, etc., there is too much surface moisture, heavy timber, etc., to favor

child development. The great heat and moisture, chills and congestions, will prevent for many years vigorous development.

In Salt Lake City, children furnish not less than two thirds of all the deaths, most of which occur under five years of age. (*Pub. Health Trans.* Vol. II, p. 150.) This section is too dry for child growth. Lack of proper care and feeding should also be taken into account.

The Pacific Coast with the exception of Oregon has much light and heat. It also feels the effects of the trade winds. The moisture is intermittent. The child life must therefore correspond, giving active, nervous, rapidly matured, precocious, acid children.

Oregon has more moisture and is cooler. It is therefore better for normal infant development. The northwestern territories are dry and elevated. Dr. Evans states that the births in Dakota are very few, and child-raising difficult. They have very little rain.

Canada is much like Great Britain in moisture. Child-life develops well in Canada.

The Atlantic slope has been undergoing a transition for some time. Cultivation and numerous towns have rendered the soil and atmosphere quite dry, making child-life precarious, especially during the hot months.

The climate of France is much like that of the United States, while Germany is more moist, and therefore has a more vigorous and prolific people.

When we remember that an equable, moist climate is the one best adapted to childraising, we can easily

calculate the effect of any region upon infancy. Within doors the climate effect may be so modified that vigorous childhood may be ensured. If it is ever remembered that more than 80 per cent. of the infant body is water, and that it must have this amount for a healthy development there need be little difficulty in maintaining a plump healthy body in any climate.

"Goitre is very common in man and beast in many limestone regions, and notably in New York and Pennsylvania." Cretins are met in the mountain valleys of Switzerland.

"How much of the spare habit of Americans is due to the climate; how much of the national nervousness and prevalence of nervous disorders? For the same reason probably, that dogs in the extreme cold and dryness of an arctic winter, contract nervous disorders and perish in a state of nervous dementia."

Many of these inferences are drawn from topographical data, as well as recorded observations, and, while eminently suggestive, may be the stimulus to call out more accurate and possibly contradictory facts.

THE NATIONAL BIAS TOWARDS DISEASE.

The national constitution is more dependent upon climate and diet than many people are aware of. Dr. Merei says: "Climate and diet, considered as to their sanitary influence, undoubtedly occupy the chief position among the agencies which regulate the physical condition of the human system." The climate decides the preference for particular kinds of food. It will be

seen then that climate is really the principal predisposing cause of disease.

In people and children whose home is in the tropics or South there is a predisposition to inflammatory diseases, while in people and children of the cold North there is a tendency to obstructive disorders. The tendency towards disease in the Swedes, Germans and inhabitants of Great Britian are about the same with those of Canada and the Northern States, while the tendency of Italians, French and the people of the Southern states is nearly the same. A child of French descent will manifest the national bias towards disease chiefly in the rapidity of its onset. The more red blood present and the more excitable the child is, the more rapid and serious is the disease tendency. The more white blood the more sluggish the temperment, the more gradual the onset of disease and the longer it takes to produce serious effects. In this country (America), composed as it is of an aggregation of nationalities, we have abundant evidences of the predisposition of certain people and their children to certain diseases. Some mothers and old ladies are so well acquainted with this predisposition that they can almost foretell the nature of the illness before they see the child.

In a few generations the national bias is more manifest in families. This family bias is often more evident in older settled countries, as England, for example, where ancestry is more of a study than it is in the newer countries. In some families there is a tendency to

hæmorrhages, inflammation of the bowels, dysentery, indigestion, chronic gastritis, urinary diseases, etc.

INFANTILE PREDISPOSITION TO DISEASES.

Referring to what was said about the division of children into acid and alkaline, it will be evident that the disease tendency in each will differ. This is one of the most useful facts of which we are acquainted.

It is found that in the fleshy alkaline subject the predisposition to disease is towards congestions, effusions and exudations; while in the lean acid subject it is to inflammation, anæmia and consequent structural derangements. The alkaline subject's diseases are those of the excretory organs, while in the acid child the secretory glands suffer most.

The brain diseases of alkaline children are chiefly ushered in with coma, and developed with effusion, *viz.*, meningitis, hydrocephalus and the like; while in the lean subjects restlessness is the first symptom and this is followed with structural change, chiefly anæmia or inflammation of the structures.

In the throat and chest diseases of the alkaline little ones we have chiefly croup, inflammatory and membranous (fibrinous) and capillary bronchitis; while the lean subjects give us spasmodic croup, or diphtheritic croup (albuminous), and more nearly inflammation of the lungs.

The bowel symptoms of the alkaline class are chiefly constipation, or there is a profuse mucus diarrhœa;

while in the acid class colic, inflammation, green stools, are the chief symptoms.

The tendency in the alkaline child is to a moist skin, crustæ lactea, pustular eruptions, etc.; while in the lean one the tendency is to a dry skin, furfuracious or papular eruptions, etc.

Thus we see that the same disease will present different varieties of symptoms, demanding, of course, very different remedies. And this rude division gives us important hints. But no where is this division of such practical importance as in the selection of the diet, as we have seen.

EFFECT OF SEASONS ON CHILDREN.

The extremes of heat in summer and cold in winter have a marked influence on children in causing disease. In winter the tendency is towards diseases of the throat and chest, and to inflammations of the serous membranes, particularly of the joints, pleura, brain and spinal cord. The blood is driven from the surface to the centre and congestions are of frequent occurrence.

In hot weather the tendency is towards diseases of the skin and bowels. The former through the irritation from the changed perspiration, and the latter from two causes: first, the increased size and activity of the liver, due to the hot weather, and second; to the irritating presence of food. Food is more easily and frequently changed in hot weather than in cold, particularly milk, and therefore more liable to cause dis-

tress in the child. This irritation frequently brings on and prolongs a diarrhœa which has been termed summer complaint. A mis-leading term, as we shall see (*vide* Entero Colitis). All diarrhœas arising in summer are not produced by this one cause. But there is a marked disposition to diarrhœa during bursts of elevated temperature.

In cold weather sickness is caused in the child by poisoning by carbonic acid gas chiefly. The foul air is absorbed by the milk and the child gets a double dose, *i. e.*, by the food and by the air. This explains the frequent attacks of indigestion that children suffer with in winter. Another cause, the stimulated air arouses such an appetite that they are inclined to over eat.

EXCITING HYGIENIC CAUSES.

Cleanliness is not usually classed as a cause of disease, but it is found that the temperature of the body sinks a degree after bathing. This daily lowering of the temperature is necessarily followed by a corresponding rise, which is an extra tax upon the vital powers of a feeble infant. The stripping is often worse than the bath, as the blood is sent from the surface and tends to produce catarrhal conditions of the air passages or bowels.

Improper dressing is another cause of sickness. The rolls of clothes tend to keep the body in a gentle moisture, and as this is easily suppressed by a draft, the child is made sick. Children are not so much ex-

posed as they formerly were. They are better and more equally dressed.

Among the well-to-do, children's rooms are frequently too hot and close in winter. Respiration is rapid and the demand for fresh air is imperative. If their room is close and the temperature high children cannot be expected to be well. In the dwellings of the humble the liability is to colds from drafts of air.

In the sleeping apartments perhaps the chief cause of disease is found, especially in winter. The room is often small and poorly ventilated, and the constant breathing of foul air renders children cross on rising, with poor appetite. They are pale, feeble-looking, and are evidently ill.

Crowding in bed rooms and crowding in school rooms are among the chief sources of foul air that children encounter.

School rooms are as a rule poorly ventilated. Built as they now are, it is difficult to make them otherwise than difficult to ventilate and heat. The most of the rooms are so large that the cold air enters more rapidly than it can be warmed. The temptation is to have the temperature too high. This relaxes, debilitates and predisposes to, as well as causes much sickness among school children. The child is either stifled with carbonic acid gas or chilled by a direct draft.

A much needed change is taking place. A general adoption of the Ruttan system of ventilation would greatly help this needed reform.

Wet feet from poor covering is a frequent cause of

disease. A good pair of shoes or boots is often more valuable than an overcoat. "Keep the feet warm and the head cool," is an old maxim that is neglected so often with children.

DIETETIC CAUSES OF DISEASE.

Errors in feeding rank first as the causes of sickness among children. This might be astonishing if we did not recall the fact (1) that the child—like a young bird—eats anything that is given it, and at any time, and (2) because the attendants are not the most thoughtful and well-informed.

The quality and quantity of the first food that the child receives is a fruitful cause of disease, as I have intimated. A friend gives it almost anything, cold water, sugar and butter, catnip tea, etc., and by the time the milk arrives it is sick.

A frequent cause of sickness when the milk arrives is putting the child to the breast too often. The breasts are caked, the mother in distress, and the nurse in alarm for fear of broken breasts, and the poor child is shook and made to nurse, notwithstanding the fact that the child has a stomachful of the first milk, enough to last him all day, or several hours at least.

The milk is feverish and the child stupid, and still it is made to draw the breasts frequently, and is it any wonder that the child is made sick. In addition to the feverish milk the mother is nervous, anxious and restless, and still this milk spoiled by the mother's condi-

tion is given to the baby, and sickness more or less pronounced is the result.

There is usually such a rush of milk at first that the mother is put upon a low diet, tea and toast, for example, and instead of allowing a more liberal diet, after a few days, this is often continued, and the poor, thin milk causes the child to fall ill.

The milk is likely scanty and some stimulant like beer is ordered and then the child is kept quiet, but soon the mother awakens to the sad fact that her child is not thriving, although it nurses often and she seems to have plenty of milk. Its stomach is deranged. It has got into the stream of gastric catarrh.

Some mothers are very indiscreet while nursing. Some do not eat enough, while others eat anything they crave, irrespective of the demands of themselves or infants.

How often is a thirsty mother allowed acid drinks or tart fruits, and then the friends are at a loss to account for the child not thriving.

Case. A child four months old, did well for the first two months, then the mother began to take hot lemonade for drinks, and about the same time passed through much grief at the temporary absence of her husband. Her milk, scanty enough before, became thin and easily soured by the acid drinks and grief. Do you wonder that her child broke out with an eruption from head to foot? This mother, tender-hearted, erred through ignorance. Remember this: Avoid acids,

they are poisonous to any child. Acidity and heat, or cold, are the infant destroyers.

Another source of disease is in careless feeding while nursing. This has been alluded to. There are only a few things that a nursing child should be fed.

One case, child ten months old, mother obliged to feed it from lack of milk, was taken to the table and given "a little ginger-bread," "piece of sponge cake," "cracker," and "half of a banana!" As a result "a cradle concert" at midnight. Found its upper incisors crowding through a swollen gum. Tongue red at the tip. It was restless, uneasy and starting in sleep. Did not lance its gums, as I would have done years ago, but regulated its diet, cured its gastritis, and the teeth came through without help.

We have already noted the effect of fat food, sweet food, and thin food as being unable to supply the needs of a child, and therefore do not need to dwell upon them as causes of disease.

A mother subject to rheumatism may give such poor milk, poisoned with uric acid, that she cannot safely nurse her infant.

Thin slop milk, either mothers' milk or that from slop-fed cows, is a frequent cause of disease among children of cities.

Eating between meals, giving the stomach no time to rest, is a fruitful cause of stomach disorder among older children. Late suppers, and fruit on going to bed, is a cause of much suffering among little folks—as well as among adults.

CHAPTER IX.

REMEDIES FOR CHILDREN'S AILMENTS.

While it is true that "an ounce of prevention is worth a pound of cure" it is also true that all the causes are not within our control, and hence sickness will come. "A stitch in time will save nine," is also an adage of great force when applied to the treatment of children's ailments. To attempt to arrest disease in its very incipiency is prevention, and is the desire of every parent. The necessary medicines for the treatment of infantile diseases should be always kept in readiness in every house in which there are children. The importance of this recommendation will be fully apparent when the peculiarities of the organism of the little ones are considered. In consequence of the activity of the vital powers, and the quickness and force of the circulation, there is a remarkable susceptibility to inflammatory action in children, so that many of their diseases rapidly run on to organic and incurable mischief. The earliest recognition of an approaching illness, and the most prompt application of treatment, are therefore of the greatest importance. Neglect or delay may prove most disastrous to life, while a few doses of an appropriate remedy timely administered will often be alone sufficient to arrest the morbid process, or they will afford temporary relief till the arrival of a physician, or, if

there be not one near, till one can be consulted by letter or telegraph.

In the treatment of infants, perseverance and watchfulness are necessary. Patient attention should be given to the investigation of every ailment, and no case should ever be abandoned as altogether hopeless. It is well known that children often recover from the most severe diseases, and, in the great majority of instances, especially if taken in time, the balance will quickly turn in the right direction.

In the choice of remedial agents the author does not wish to bias any one in favor of any system, and throughout the work various articles are mentioned as used by all the schools. After having studied and experimented with all systems of treatment in the army, hospitals, and private practice, the author has found that the similar or Homœopathically selected remedy is most prompt and least harmful in curing. It is now universally admitted that the mild "Homœopathic remedies will do for children." The author does not discard other means of relief. The absence of nauseousness from Homœopathic medicines is an advantage which mothers can appreciate who have witnessed the natural and proper disgust of children to compounds and pills. The agreeableness of the remedies is, however, only a minor advantage of the treatment. In action they are direct and curative without shock or violence to the system. They are conveniently put up and can be sent round the world by mail.

Every mother should keep in the house in a secure

place ready for use at a moment's notice, the following articles:

FOR EXTERNAL USE.

Camphor spirits is a remedy for fainting, collapse, convulsions, and is an antidote to most poisons.

Arnica tincture is the best remedy for bruises, falls, knocks, etc., diluted one part to ten of water.

Calendula tincture makes wounds from cuts heal up rapidly. A cut should be wrapped up at once in a cloth wet in Calendula (ten drops to a cup of water). If the bleeding is severe tie up the wound tight, especially if the blood flows in spurts, and then wet the cloth with Calendula. If it still bleeds press with the fingers between the wound and the heart. The blood will coagulate and plug up the wound and glue it together so that it will heal rapidly, without much if any scar. In cuts on the face the edges of the wounds should be drawn together and held there with strips of adhesive plaster. Clean wounds of all dirt, etc.

Hartshorn or Ammonia is also excellent for fainting, loss of blood, suffocation. The old-fashioned smelling salts was a union of Hartshorn and Camphor, scented.

Glycerine pure may be kept and diluted with three times its bulk of water. It is excellent as a local application in erysipelous and local swellings. A bottle of pure oil of Sweet Almonds or Sweet oil should be kept. The Almond oil is best, as being purest and without odor.

Coffee is a ready antidote to most vegetable poisons, and may be made and kept in a bottle to which a few drops of alcohol is added to preserve it. Ten drops to a teaspoonful of hot water is a dose. Or it may be made fresh and hot when wanted.

A roll of isinglass adhesive plaster, and a roll of bandage about an inch and a half wide and six feet long should be kept for wounds of the head, legs, or arms. For the fingers and toes it may be torn in two. A narrow bandage is best.

Mustard may be at hand in cases of poisoning to cause vomiting, although warm water with salt will usually answer the purpose effectually.

As to local applications, those who use remedies Homœopathic to the case, find little use for them, if we except hot and cold water. The action of the remedy being prompt and effectual. The same remedy may be used locally as well as internally.

Some say that they cannot keep house without whisky, pain killer, peppermint, etc. To some a whisky sling is a sovereign remedy, but let us see how it acts. It is given hot. Much of the good effect is due to the hot water. The alcohol it contains stupefies, so pain is not felt. The fusil oil present is harmful. It would be much better to try hot water alone or some remedy that will promptly relieve the pain. It is not good for the brain to be stupefied, which means to be filled with blood. It dilates the bloodvessels and tends to weaken the child's self-control to be manifested by and by in great passion, drinking or insanity. No mother should

give anything to her child to weaken it in any way. If spirits must be used get pure (Homœopathic) alcohol, dilute it with an equal amount of water and it is better than whisky. Add a teaspoonful of burnt sugar to an ounce and it is equal to brandy. Burnt brandy so often given for dysentery is simply burnt sugar and hot water, the alcohol having all been burned out. Toast water or hot coffee is just the same, and for colic (belly ache) will act just as promptly.

Pain killers are composed largely of cayenne (red) pepper and essences that act like hot water. Belladonna, Chamomilla or Colocynth will do all that they will do. Peppermint is similar in action to red pepper. Chamomilla in hot water acts just as promptly, and also cures the derangement of the nervous system that caused the pain.

Saffron so often used to bring out eruptions is surpassed by Aconite. Babies with red gum are often dosed with Saffron. If it was generally known that this was a heat rash, something would be given to suppress it, rather than increase it by hot drinks.

Water, cold, warm, or hot, is a valuable agent in the treatment of children's diseases, both externally and internally. Hot water acts best in cases of colic, congestions, inflammations, etc. Cold is best to stimulate the nervous energies.

THE TWENTY-FOUR CHIEF REMEDIES.

In case it is inconvenient to procure a large chest containing all the remedies mentioned, a smaller one

filled with the following principal medicines should if possible be kept in the house:

1. Aconitum napellus, 3
2. Arnica montana, 3
3. Arsenicum album, 3
4. Belladonna, 3
5. Bryonia, 3
6. Calcarea carbonica, 6 t
7. Calcarea phosphorata, 6 t
8. Chamomilla, 3
9. China, 3
10. Cina, 3
11. Coffea, 3
12. Drosera, 3
13. Gelsemium, 3
14. Hepar sulphuris, 3
15. Ipecacuanha, 3
16. Mercurius biniodatus,
17. Mercurius solubilis, 6 t
18. Nux vomica, 3
19. Phosphorus, 3
20. Pulsatilla nigricans, 3
21. Rhus toxicodendron, 3
22. Spongia, 3
23. Sulphur, 30
24. Veratrum album, 3

These medicines used in Homœopathic practice are prepared with great care in different forms for use, viz: globules (pellets), liquids (dilutions), or powders (triturations). The pellets are the most convenient for family use. Medicines that are best put up in powder form are marked with a "t" after the attenuation. It is very necessary that these remedies be put up with the greatest care and away from all contaminating odors, and kept carefully. They can, of course, be obtained pure and reliable from any Homœopathic physician. Tightly corked, these remedies will keep good for a long time.

A MORE COMPLETE LIST OF MEDICINES

Recommended in this work should if posssible be obtained, as that will give parents a chance to use just the medicine mentioned for the symptoms of the various diseases.

Æthusa,
Aconitum napellus,
Ailanthus glandulosa,
Ammonium bromatum,
Ammonium carbonicum,
Antimonium crudum,
Apis mellifica,
Argentum niticum,
Arnica montana,
Arsenicum album,
Arsenicum iodidum,
Aurum metallicum,
Arum tryphyllum,
Baptisia tinctoria,
Baryta carb.,
Benzoic acid,
Belladonna,
Bromium,
Bryonia alba,
Cactus grandiflora,
Calcarea carbonica,
Calcarea iod.,
Calcarea phosphorata,
Cantharis vesicatoria,
Carbo vegetabilis,
Chamomilla matricaria,
China officinalis,
Cina anthemintica,
Coffea crude,
Colocynthis,
Corrallium,
Croton tiglium,
Cuprum metallicum,
Digitalis,
Drosera rotundifolia,
Dulcamara,
Euphrasia officinalis,
Equisetum,
Ferrum,
Gelsemium sempervirens,
Glonoine,
Graphites,
Guaiacum,
Hamamelis virginica,
Helleborus niger,
Hepar sulphuris calcareum,
Hydrastis can.,
Hyoscyamus niger,
Ignatia amara,
Iodium,
Ipecacuanha,
Iris versicolor,
Kali bichromicum,
Kali bromium,
Kali chloratum,
Kali hydriodicum,
Kreasotum,
Lachesis,
Lycopodium,
Muriatic acid,
Mercurius biniodatus,
Mercurius iodatus,
Mercurius corrosivus,
Mercurius solubilis,
Millefolium,
Nux vomica,
Opium,
Plumbum,
Platina,
Phosphorus,
Phosphoric acid,
Podophyllum peltatum,
Pulsatilla nigricans,
Rhus toxicodendron,
Rheum,
Sambucus,

Silicea,	Urtica urens,
Spongia,	Veratrum album,
Sulphur,	Veratrum viride,
Tartar emetic,	Zincum.

A word about the strength of the medicines. Persons not informed often call at a Homœopathic Pharmacy for certain remedies, and add, "give me the strongest." Little realizing that the strongest of Aconite, for example, is the "mother tincture," and three drops of that would kill a child. The lowest form or attenuation that should be used of any of the remedies, is the 3d or 6th. Better use the higher than the lower. It is here that frequent mistakes are made by those not familiar with this subject. Where life or death hangs in the balance, the importance of obtaining reliable remedies cannot be overestimated.

Pellets or powders may be taken dry on the tongue, but it is better, when convenient, to dissolve them in half a glass of pure water.

For infants who object to cold water, the spoon may be warmed by dipping it in hot water. The glass should be scrupulously clean, and if the mixture has to stand some time after being made, it should be covered over with a saucer, napkin or sheet of note paper. The spoon should always be wiped after being used, and put away in a clean place till again required. Fine glazed earthenware or glass spoons are the best for this purpose, silver spoons will answer. If the medicine has to be kept several days, cold boiled water should be employed, and the mixture put into a new bottle, particular care being taken that the cork is new and sound. To protect the medicines from light and dust, and to

distinguish them from other liquids, graduated earthenware medicine cups, with covers, specially made for this purpose, are the best, and may be procured of any Homœopathic Pharmacy. (See page 390.)

The most appropriate times for administering the medicines, as a rule, are—on rising in the morning, at bedtime, and if oftener prescribed, about an hour before and after a meal. For special directions see the various diseases.

In determining the quantity and strength of doses, several circumstances require consideration, such as age, sex, habits, nature of the disease, organ involved, and susceptibility to the medicine. As before stated, the circulation of children is quicker than that of adults, and the nervous system more impressible; the dose has therefore to be regulated by these peculiarities.

With the above exceptions, and allowing for any peculiarity of constitution, the following general directions may be given as to the dose: For a child two pellets. For young infants, one-half of the above quantity. One pellet or a powder is easily divided into two or more doses, by mixing it with two or more spoonfuls of water, and giving one spoonful for a dose.

In this repetition of doses we must be guided by the acute or chronic character of the malady, the urgency and danger of the symptoms, and the effects produced by the medicines. In violent and acute diseases, such as Croup, Convulsions, etc., the remedies may be repeated every fifteen, twenty, or thirty minutes; in less urgent cases, every two, three or four hours. In chronic maladies the medicine may be administered every six, twelve or twenty-four hours. In all cases when improvement takes place, the medicines should be taken less frequently, and gradually relinquished.

CHAPTER X.

PROMINENT SIGNS OF SICKNESS.

Before taking up the disorders of children separately let us briefly glance at the more prominent signs of sickness. It should be remembered always that these signs are only suggestive, and as such are valuable. The great trouble with people who have little knowledge of disease is, that they decide by, or take alarm at, one or two symptoms. Mothers who see the first few alarming symptoms are often confused and mistake the nature of the case. A fever is the first expression of many diseases, and which one is about to set in, is often impossible to tell for twelve or twenty-four hours, or even longer. It is apparent, then, that while everything may be done to cut short an attack of sickness, just the nature of the trouble may not be accurately known until the child has been sick some time, or perhaps not even until it is well. The history of the case as well as the symptoms present helps physicians very much to understand a case.

In the following observations the reader must not expect to find more than certain general truths, derived from a scrupulous and comprehensive survey of disease, briefly expressed.

The chief sources from which we derive material for the formation of our diagnosis and prognosis in the dis-

eases of children, are — the countenance, the gestures and attitude, the sleep, the cry, the mouth and breath, the general surface and temperature, the respiration, the circulation, and the discharges by vomiting and stool. Before examining these seriatum, I would briefly offer the following suggestions:—1. Epidemic diseases vary much in their intensity, being occasionally very mild, and at other times severe. Hence, before forming a prognosis in the case of any such disease, the character of the prevailing epidemic must be taken into consideration. 2. Diseases of the nervous system are very fatal to children, hydrocephalus being especially dangerous, and lockjaw, (trismus nascentium) generally fatal. 3. A very guarded opinion should be formed in those affections which are due to any hereditary predisposition, as well as in diseases occurring in so-called scrofulous children, and in those disposed to consumption. 4. The symptoms are often masked or complicated by the improper administration of purgatives, or of soothing poisons. Some silly mothers, and many bad nurses, are fond of reckless amateur doctoring; while, when they see the resulting mischief, they are not always disposed to confess their delinquencies. 5. Some hours before death a total remission of the symptoms not unfrequently occurs, especially in the cerebral diseases of children; consciousness being restored, and the countenance becoming brighter and more natural. Those who mistake this change, and take a favorable opinion from it, will often be sadly disappointed. 6. Beware of giving up all hope in any instance, without

"Mama will take it up."

L. AUDEBRACH Fc. Phila.
F.F. REISELL

great caution; for not only do young children often rally from the most severe disorders, but the attendants, regarding the case as hopeless, will cease to administer the remedies, or, as they occasionally say, "to worry the poor dear." "As long as there is life there is hope."

THE COUNTENANCE.

The infant's countenance offers to us one of the most interesting and intelligible pages in the book of Nature. In its calm, we read the health and ease of all the organs and functions; in its smile, happiness of body and mind. Fear and determination are well expressed in the illustration of the daring "healthy sport" of coasting. In its expressions of uneasiness or pain, we first discover the invasion of disorder or disease. Attention will probably be first attracted by some undefined change, which it will require a stricter observation to decipher and associate with its peculiar cause.

Four principal indications—speaking roughly—are presented by the physiognomy. 1. In general uneasiness, excitement and fever, the whole expression of the countenance is altered; a flushed and heated condition, with occasional wrinkling of the features, being chiefly remarkable. 2. In affections of the brain and nervous system, the expression of the upper portion of the face —as the forehead, brows, and eyes — is especially changed; the forehead being contracted and heavy, the brows knit, and the eyes wild and vacant, or fixed and staring. 3. Morbid conditions of the organs of respir-

ation or circulation affect the features of the middle of the face, the nostrils being rendered sharp and distended, while a dark circle surrounds the mouth and eyes. 4. In diseases of the abdominal viscera a peculiar expression is given to the cheeks, mouth and lips; the cheeks appearing sallow and sunken, the mouth retracted or drawn, and the lips colorless or brown.

In acute affections of the brain or its coverings, (meninges) the face is generally flushed, turgid and hot, or the color is intermittent—the redness being fugitive and followed by pallor; the eyes are vacant or staring, or the upper eyelid cannot be raised, and the eye is half open, or there may be squinting; in the early stage the pupil is contracted, but becomes dilated as the disease advances; the upper lip is drawn firmly over the gums, and is of a livid hue; and, at times, there are convulsions of all the features. The deformity produced by hydrocephalus can hardly be mistaken, the disproportion between the size of the head and face, with the raised and bulging forehead, at once attracting attention.

A dusky-red, swollen appearance of the features is present in diseases of the organs of respiration, as laryngitis, bronchitis, or pneumonia. There is also wide dilatation of the nostrils during each inspiration, and strong contraction with each expiration; knitting of the eyebrows; and lividity of the lips, which, moreover, are widely opened to facilitate respiration if the breathing be much oppressed. Should the disease assume a chronic form, the features will become emaciated, and present an appearance of old age.

The expression of countenance produced by disorders of the abdomen is mostly characteristic; it being difficult to mistake the cause of the peculiar peevish or fretful look, sharp features, sunken eyes, pallor, and dark color of the lips and skin surrounding the mouth. In severe forms of gastro-intestinal inflammation the face rapidly becomes sallow and emaciated; the lips are stretched firmly over the gums, and are pale, dry and cracked; the chin seems to project unusually; and the nose looks swollen. In chronic irritations of the bowels from food, the nose and upper lip are often tumid, and the white of the eye is said to look pearl-like. In weakness and exhaustion from diarrhœa, or from loss of blood, etc., the face is alternately flushed and pale, hot and cold; while, in very extreme cases, the cheeks are pallid, cold, and glistening; the eyelids are half closed; the eye covered with films of mucus; and the pupils are contracted.

It only remains to remark that the countenance is of a yellow hue in jaundice; livid, when the blood is improperly ærated; and a deep blue or purple in morbus cæruleus, in which affection a malformation of the heart allows of an admixture of the venous with the arterial blood. The watery appearance, redness of the eyes, and swelling of the eyelids, which precede the eruption of measles, will not be forgotten by one who has witnessed these early symptoms; and the same statement applies to the brilliancy of the eye from Belladonna and extreme contraction of the pupil caused in the child by a small dose of Opium.

GESTURES AND ATTITUDE.

In infants old enough to be playful and easily amused when awake, the commencement of disease is frequently signalized by their ceasing to be attracted by surrounding objects, by their listlessness and dislike to any movement, and by the difficulty experienced in exciting their smiles or that peculiar cooing sound by which they express their satisfaction or delight when well. As indisposition creeps on, the infant begins to give evidence of its uneasiness by frequent startings and general restlessness; supposing that it has begun to support itself, to hold up its head, it suddenly ceases to do so, at the same time that it assumes the posture and movements of extreme languor, is clearly indicative of that muscular debility which so commonly precedes an attack of acute disease. If the child has arrived at the age of fifteen or eighteen months without being able to hold itself upright, we shall probably find it suffering from rachitis, as indicated by deformity of the thorax, incurvation of the spine, and weakness of the lower extremities. The pain of inflammatory affections often cause the infant to avoid all movement, or, in inflammation of any part of a limb, all motion of the affected member; so in severe abdominal irritation or inflammation the child lies quiet, with the knees bent and drawn upwards, twisting about, however, and uttering loud cries on the sudden accession of pain. An acute spasmodic pain induces immediate contraction of the whole of the muscles, and the infant starts in terror and sur-

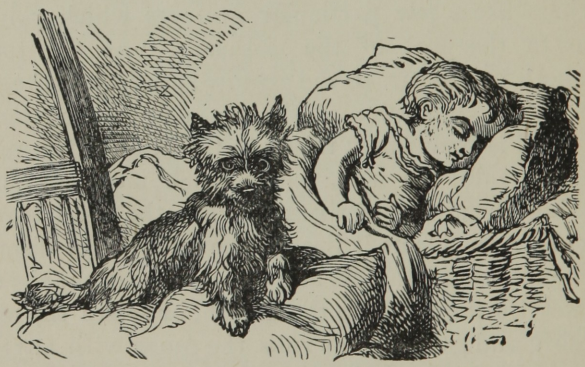
prise. In convulsions the head is drawn backwards, or one arm becomes rigid, or a leg is drawn upwards, and the child cries violently from pain and fear; at the same time the breathing may appear spasmodically affected, and it may be observed that the thumbs and fingers are drawn into the palms of the hands, while the toes are firmly flexed downwards. In great prostration from any cause the child lies motionless, or one side of its body may be paralyzed.

There are a few particular gestures which point at once to the seat of the disease: "As the tongue speaketh to the ear, so the gesture speaketh to the eye." Thus, in inflammation of the brain or its membranes, the hand is frequently raised to the head, attempts are made to pull the hair, and a quick movement, as of striking the air, is performed, while the head is rolled from side to side as it lies on the pillow; in disorders of the tongue or throat, and during dentition, the child presses its fingers into the mouth, or seizes the nipple roughly and greedily, or rubs the gums with anything it can get hold of; in croup and other diseases producing difficulty of breathing it pulls at its throat, tries to compress it, and by its urgent cries till placed in a sitting posture, indicates the seat of suffering and its painful effect; while, in great prostration from any cause, the hand wanders automically over the bed, picking at the clothes, etc. Lastly, there are the convulsive movements of the muscles of the face so common during dentition, or when any irritation of the digestive canal exists; and the involuntary and tumul-

tuous movements which betray St. Vitus dance, chorea, in the more advanced child. These, however, need no description.

THE SLEEP

The sleep of the healthy infant is tranquil, deep, and prolonged, its countenance at the time being calm and happy, its breathing slow and occasionally interrupted by deep inspirations or sighs, and its limbs relaxed; on



HEALTHY SLEEP.

awaking it is lively, and seeks the breast. In disease, on the contrary, the rest is disturbed and broken, the respiration is loud and labored, the brow is contracted or the mouth is drawn, there is grinding of the teeth or gums, sudden startings occur, and the child awakes either fretful and peevish or if frightened to cry and scream.

For the first few weeks after birth infants pass much

of their time in sleep, during which the skin is moist and the digestion energetic. As the system is slightly enfeebled during sleep, and the power of maintaining the animal heat lessened, care must be taken to shield them from draughts, cold, etc. Any irritation in the bowels or in the brain, or slight degrees of uneasiness or pain, lessen the ability to rest; there is also very frequently troublesome sleeplessness during convalescence from acute disorders. On the other hand, an excessive or deep sleep is often produced by overloading the stomach, by serious cerebral disease, and sometimes by dentition. A strong indication of a tendency to convulsive disorders is evinced by a rigid extension of the limbs with a turning inwards of the great toes and thumbs during sleep.

THE CRY.

The first indication which the infant gives of life is to cry, and the more loudly and freely that it does so the better; since it proves that the most important of the vital organs are well formed, and that the child is not deficient in health and vigor. After the first few hours of existence, however, the properly nursed healthy infant cries but little; the act of crying being, as it were, reserved to express pain, distress or hunger. Violent paroxysms of crying are generally produced by great pain; and when prolonged, become injurious, causing congestion of the brain, and sometimes convulsions. In affections of the lungs, especially pneumonia, the cry is said to be laborious, or smothered, *i. e.*, it is

rather a groan than a cry; in croup it is hoarse and muffled, and attended by a peculiar ringing sound, or crowing inspiration; in œdematous angina, according to Billard, it is tremulous; in acute cerebral diseases there is sometimes a single, sharp, powerful cry, occurring at rather distant intervals, and which has been termed the hydrocephalic cry; and lastly, in most diseases of the stomach and intestinal tube the cry is prolonged and acute, or low and moaning if they have produced much exhaustion.

In young children the cries are often accompanied by an abundant secretion of tears, but this is not the case with infants until about the third or fourth month; since the functions of the tear gland are not brought into play until this time. Hence when no tears are shed we must consider whether this be due to the age of the little patient or to the functions of the lachrymal gland having been suspended by acute disease. M. Trousseau lays it down as an aphorism, as little liable to exception as any aphorism of Hippocrates, that when a child sheds tears a favorable prognosis may be delivered, however menacing the symptoms; while on the contrary, when this is not the case in painful diseases, and especially if the eyes are dry and sunken in the orbits, great danger to life exists. The observation applies almost invariably to children under two years of age, and particularly to those less than one, but may frequently be verified even until seven.*

* *Gazette des Hopitaux.* No. 14. Paris, 1848.

THE MOUTH AND BREATH

In health, the mouth is moist and pale, the tongue smooth and partially covered with a layer of whitish mucus, the gums red, and the breath free from smell or having only the odor of the mother's milk.

These conditions are altered by slight causes; the mouth then becomes hot, red, and dry; the tongue loaded with a white, curdy matter; and the breath is hot, sour, or acid. This is especially the case in fevers, in acute affections of any of the important viscera, in diseases of the alimentary canal, and in painful dentition.

In severe cases of smallpox, scarlatina, measles, laryngitis and croup, the tongue often swells, and becomes covered with a dark brown fur. In scarlatina, the tongue is loaded with a thick white fur, through which enlarged and prominent papillæ project; but as the fur clears away, it becomes clean and preternaturally red, and of a strawberry appearance. Aphthæ of the mouth, throat, and tongue, are common in infants; they may be due to improper food, to impure air, to the irritation of dentition, or to more serious causes. The tip of the tongue is very red in gastritis. The breath may be rendered fetid by most attacks of fever and by indigestion; it becomes positively foul only in gangrene of the gums or cheeks, in gangrene of the lungs, or in severe ulcerations about the nose or throat.

THE GENERAL SURFACE AND TEMPERATURE.

In the healthy infant, the skin should be firm, elastic, and smooth, of a rosy flesh color, neither too red nor too pale, moist and cool, and uniformly distended by soft subcutaneous areolar tissue and fat. Whenever it becomes hot and dry, or pale and flabby, or intensely red or yellow, we may be sure all is not right; moreover, the slightest eruption should attract attention, and, if it be contagious, the friends should be warned.

A hot, harsh, dry skin is common to all febrile and acute diseases; a cold, moist one to constitutional feebleness, or to sclerema, or to disorders producing great prostration; increased redness is an indication of inflammation, or warns us to look for one of the eruptive fevers; a pale, doughy, or puffy condition, with emaciation, bids us take defensive measures against tuberculosis; intense blueness may arise from any cause interfering with the oxygenation of the blood, or from cyanosis; yellowness, from some affection of the liver; while a dirty, sallow hue may be produced by diarrhœa, or any protracted disease of the abdominal viscera.

A red mark or stain, easily produced by pressure upon the skin of hydrocephalic children, has been pointed out by M. Trousseau, and termed "tache meningitique, ou tache cerebrale." This mark is most readily made upon the face, neck, or chest; and though most common in cases of hydrocephalus, yet it has also been observed in congestion of the brain, pneumonia, etc. It is probably due to some altered relation between

the supply of nervous power to the capillaries and the circulation, allowing of a ready dilatation of the superficial vessels when any irritation is applied to the skin.

The temperature of the body often furnishes indications of disease, though it must be remembered that the heat proper to young children varies as much as their constitution, vital powers, etc. Speaking generally, however, it may be said that the normal temperature varies from 88° to 96° Fah.; and that when it is above 100° Fah., fever may be considered as existing; and when below 88°, some exhausting disease, as sclerema, hence termed by M. Roger, *cold œdema*. According to M. Roger, pneumonia and typhus fever are the diseases attended with the greatest rise of temperature. Thus, if the pulse and respiration be quickened, and the temperature raised to 106°, inflammation of the lungs may be diagnosed; while the same degree of heat, with a moderate pulse, is peculiar to typhus. In peritonitis or enteritis the temperature is said seldom to reach 104°. To ascertain the temperature, the mother may use an ordinary thermometer, if the bulb will rest against the skin. It should be placed under the naked arm.

Chills do not occur in young children, not even when suffering from intermittent fevers. M. Bouchut states that he has observed the commencement of an attack of intermittent fever in several children under two years of age, and not one experienced shivering; the cold stage being only outwardly betrayed by a considerable paleness of the face, decoloration of the lips, and a manifest bluish tint beneath the nails.

THE RESPIRATION.

The new-born infant breathes instinctively, without method or regularity. This fact should be remembered by all mothers. When about two years of age, the respirations become more regular. The younger the child, the less the chest dilates during inspiration, and the more freely do the muscles of the abdominal wall and the diaphragm act; hence the respiration is said to be abdominal. The respiration is most tranquil during sleep, is repeated twenty to thirty times a minute, and the movements of inspiration and expiration succeed each other without effort. On awaking, the breathing is altered; for a time being calm and easy, then intermittent and hurried, and again free and tranquil.

The chests of children at the breast are but slightly resonant on percussion; on auscultation, the respiratory bruit is heard, hard and feeble, owing probably to the incomplete dilatation of the air cells. After this period, as the rarefaction of the lung tissue becomes greater, the resonance increases; while the respiratory murmur becomes sonorous and roaring—purile respiration.

All diseases of the glottis, larynx and trachea are attended with difficult and noisy respiration; they are also accompanied with cough, which is hoarse and spasmodic in inflammation of the glottis, ringing in laryngitis, and crowing in croup.

In bronchitis, pleurisy, and commencing pneumonia, the breathing is merely hurried, the cough hacking and

dry, and unaccompanied with expectoration; as the severity of the inflammation increases, however, the rapidity of the breathing becomes augmented, so that in confirmed pneumonia, the respiration may be termed *panting*, from sixty to eighty inspirations being made in the minute. At the same time there is rapid dilatation and contraction of the nostrils, violent moist cough, and copious expectoration; the matters expectorated being generally swallowed, so that we are unable to aid the diagnosis by their examination. When the pain in pleurisy is acute, the respiration has the peculiar character of being *restrained*, *i. e.*, it is suddenly stopped at each effort by a kind of convulsive spasm. In peritonitis, also, the inspirations are short, jerking, and difficult, owing to the pain to which all movement of the abdominal muscles gives rise.

As regards the value of auscultation (listening) in the pulmonary affections of children, I need only here mention that in many cases it is useless; while in all, much less reliance must be placed upon the signs derived from its practice than in the diseases of the adult.

THE CIRCULATION.

Authors who have paid attention to the frequency of the pulse in children at the breast have not all arrived at the same conclusions. Thus, Haller fixes the number of beats at 140 per minute; Sœmmering, at 130 or 140 the first year, 120 the second, and 110 the third; Billard observed a minimum of 80, and a maximum of 180,

in thirty-nine infants from one to ten days old; while M. Trousseau found a minimum of 96, and a maximum of 152, in children of from one to thirty days.

From a careful examination, however, of much that has been written upon this subject, I think I am justified in deducing the following observations:

1. In young infants, no signs can be deduced from the fullness or hardness, the strength or weakness of the pulse, since generally these distinctions cannot even be recognized.

2. The pulsations are often irregular, without any disease being present.

3. They are very frequent, the normal quickness varying from 110 to 150 a minute; the mean number being 130.

4. They diminish gradually as the period of weaning approaches, continuing to do so until adult age, when they are about 75.

5. Sex has no influence until the age of seven years, after which the female pulse becomes slightly quicker than that of the male.

6. Sleep lowers the frequency by about eighteen or twenty beats per minute.

In estimating the value of the indications derived from the pulse, it must be remembered that the heart's action is more variable in infancy than at any other period of existence, and that moral impressions quicken the pulsations as much as fever or inflammatory disease.

DISCHARGES BY VOMITING AND STOOL.

Infants frequently vomit from mere repletion, a greater quantity of milk having been sucked than the stomach can digest. In such cases the milk is brought up unchanged, or partly coagulated.

Any disturbance of the process of digestion will induce sickness. Repeated vomiting, however, shows, that the cause is more than temporary, and should be sought for. It may be due to improper food, to disease of the stomach or intestines, or to disease of the brain. Some of the eruptive fevers, especially scarlatina, are ushered in by vomiting; so is infantile cholera. The paroxysms of hooping cough are frequently terminated by a fit of vomiting. As children usually swallow matters expectored from the bronchial tubes, these expectorations are often ejected with the contents of the stomach, and give a slimy appearance.

During the whole period of infancy and childhood the evacuations from the bowels are more frequent than in after life. Diarrhœa, however, is readily induced by any excess in the quantity of the nourishment, or by improper food, or by any irritation or inflammation of the alimentary canal, or by the irritation of dentition.

The first stools after birth, the meconium, are of a dark green or black color, very viscid and have an odor resembling that of perspiration. Subsequently they become of a light brown or yellow hue, of a curdy consistence, and free from odor. Frothy, acid evacuations, of a pale green color, indicate some disturbances of

digestion; discharges of slimy mucus are common dur ing dentition, or when worms are present in the intestines; thin, fetid, dark brown stools signalize chronic diarrhœa; and, lastly, a dark green color of the discharges generally indicates serious disease of the stomach or intestines.

Constipation is not uncommon in infancy. It may arise from the quality of the mother's milk, from the exhibition of soothing syrups containing Opium, or from some derangement of the liver preventing the free secretion of bile, or from the food.

THE URINE.

The examination of the urine not only affords but little information in the diagnosis of the disorders of the period of life under consideration, but is obtained with such difficulty that the nurses are seldom able to show a specimen. Hence it is only necessary to mention that in all febrile affections, it is scanty, high-colored, of high specific gravity, usually very acid, and often deposits a sediment; in intestinal irritation from worms, etc., and in cerebral disturbance, it is white and thick, and sometimes loaded with phosphates; in indigestion, and during dentition, it may be pale, limpid, and abundant; while after scarlatina, on the supervention of acute desquamative nephritis, it may become scanty, of a dark smoky color, and loaded with albumen.

These prominent signs should be carefully compared with the causes of sickness, the feeding, and diseases to which they point, etc.

DISEASES OF THE DIGESTIVE ORGANS.

CHAPTER I.

FUNCTIONS OF THE DIGESTIVE ORGANS.

To know whether the digestive organs are in a healthy condition is very important. If the child cannot eat and digest food, it can neither be well, nor get well, when sick.

The signs of the proper development of the digestive organs are few and reliable. As we have already remarked in studying the child's face in health, the lower part is an index of the condition of this apparatus. When well developed the lower part of the face is full and broad, and the body is well cushioned with fat. If the appetite is good and the child thin, then the absorbent system is at fault. Digestion is really a dissolving of the food by the alkaline saliva, acid gastric juice and alkaline bile and pancreatic fluid. The alternate action of these alkaline and acid fluids tends to break down the albuminous and fatty matters of the food and change the starch into sugar.

The size, shape and coat of the tongue, as we shall see helps us to decide as to the normal or abnormal condition of the digestive apparatus.

The appearance of the abdomen also indicates the

activity of digestion. It should be full but not too prominent. A healthy stomach is seen on p. 25. A full rounded abdomen is one of the best signs of health. There is, however, a prominent appearance of the bowels with a ferocious appetite that is a sign of disease. A child that wants to eat all the time is not well.

There are fixed times to eat. Nature says rest after eating, from two to five hours. The infant may not be able to wait two hours while the active man is scarcely hungry at the end of five long hours. A growing child must eat oftener than one that is not. An active child should eat more and oftener than an indolent, languid one. A thin child will want to eat oftener than the plump child. When the food is dissolved, it takes from a half hour to several hours to digest it — an hour is the average time in an infant. Then these organs need a rest before they are able to resume work again. The follicles of the glands have been emptied and they must fill up again, cells must be manufactured and repair go on before they are ready for normal functional activity.

The more prominent signs of hunger in the infant should be learned. The lips move as in feeding, the head is inclined forward, the limbs move in eager anticipation and a grunting noise is made. If the craving manifested by these symptoms is not supplied, the child cries feebly, and finally if its wants are not heeded it wails sharply and severely, stopping short now and then to see if it is to receive attention.

CHAPTER II.

THE MOUTH AND ITS DISORDERS.

Sometimes the mouth is not of proper shape or there is deformity that renders feeding difficult or impossible. The most frequent deformities are hare-lip and cleft palate. The lips may be stuck together and the gums adherent. Cleft palate and hare-lip should be closed as early as possible. The opening in the lip may be partially and temporarily closed by drawing the edges together with a strap of adhesive plaster, and the child may need to be fed. If the cleft is on both sides it will be very difficult for the child to swallow or get any nourishment. Oiling the little thing two or three times a day may keep it alive until the operation is performed and healed so it can nurse. In case of any deformity the medical advisor should be consulted at once, he will know just what to do.

TONGUE SYMPTOMS AND THEIR MEANING.

This is one of the most expressive organs that we have for study, and every mother should be familiar with its appearance in health and disease. At the entrance of the digestive system, its appearance is really an index of the condition of the alimentary canal, and also of other parts of the body. Its peculiar appearance is often the first sign of disease.

During health the mouth is closed, and the tip of the

tongue cleaves to the roof of the mouth. If the mouth is open, the tongue depressed, there is either trouble with the throat, or great prostration of the whole system.

In health the tongue is moist, smooth and generally covered in its centre and toward its root, with a thin, whitish coating. The mouth is always moist and of a palish hue, and the gums of a bright red color. The appearance of the tip half of the tongue, as a rule, is the most important to notice. The back part is not so much nor so readily changed by disease.

When the tongue is loaded with a white, curdy matter, disturbance of the digestive process, or a slight irritation of the alimentary canal, is generally present; usually the coating is not very heavy. Increased redness, heat and dryness of the tongue and parieties of the mouth, indicate the first stage of inflammation of the mouth, and often accompanying inflammation of the alimentary canal.

Small points, or patches, dispersed over the tongue and inside of the mouth, are the result of inflammation of these parts, and is usually symptomatic of disease of the stomach or bowels, as a local affection, or it may be produced by confined and impure air, want of cleanliness, etc.

Aphthæ of the tongue and mouth, are the result of follicular inflammation; they may depend on improper food and vitiated or confined air; or they may be developed by dentition, or be symptomatic of disease of the alimentary canal. (See Aphthæ.)

A pale, flabby tongue is the indication of great debility or exhaustion.

Redness of the tongue is symptomatic of acute inflammation of the gastro-intestinal mucous membrane. (See Stomach.)

In diseases with fever, and in most of the affections of the alimentary canal, the tongue is covered with a whitish coat. In protracted irritations of the bowels, the coating of the tongue generally assumes a dirty yellow or brownish color. (See Summer Complaint.)

Increased secretion of saliva occurs immediately preceding, and during the process of dentition, and in the course of inflammation of the mouth, it is also a common precursor of gangrene. Increased heat and redness, with swelling of the gums, occurs at the period of dentition. A dark, red, and tumid state of the gums, generally precedes the occurrence of gangrene of these parts.

A *large, long* tongue is most conspicuously found in chronic hydrocephalus and cretins.

A *small*, thin tongue is found in atrophy.

A *gradual* diminution in size denotes gravity, and is a sign of a dangerous affection of the brain.

A *broad* tongue is found in rachitis, scrofula, (so-called) inclination to abdominal affections and in intermittent fever.

A *broad, flabby* tongue showing the prints of the teeth is found in diphtheria.

A *thick swollen* tongue is found in rachitis, cretins, chronic hydrocephalus, obstinate dyspnœa, chronic inflammation of the stomach, catarrhal affections, Mer-

curial salivation, inflammation of the tongue, and after death from strangulation or suffocation.

A *swollen and heavy tongue* in croup, pleurisy and pneumonia is a bad sign; just as is its sudden diminution, without improvement of the other symptoms. (Hippocrates.)

Pityriasis linguæ (map tongue) consists of white islands or circles or semicircles, the rest of the tongue being of a normal rose red tint. These spots are made up of an accumulation of epithelial cells.

In atrophic children transverse fissures are often seen upon a very smooth, red tongue; the fissures present deep yellow bases and obstinately resist treatment. In fatal cases they do not disappear before death.

Homœopathic physicians put great stress on the appearance of the tongue, which is often a hint that points to the right remedy.

A *red* tongue all over, with considerably raised papillæ, suggests scarlet fever and its remedy, Belladonna. Tartar emetic also has a red tongue.

A red, *glistening* tongue suggests Kali bich. or Lachesis.

A red *tip* in the shape of a triangle suggests typhoid fever and Rhus tox.

A red, undefined tip and *red border* suggests Sulphur.

A collapsed and lead-colored tongue suggests Arsenicum.

A bluish tongue, suggests trouble with the heart, Digitalis, Arsenicum or Muriatic acid.

A *whitish* coat on one side of the tongue, Rhus tox.

A *whitish* coat on both sides, Causticum.

A whitish coat in the middle only suggests pneumonia and Phosphorus or Bryonia.

A whitish coat on the root strongly marked suggests Sepia.

A general *thick* white coat suggests Bryonia or Antimonium crud., etc.

A *map* tongue suggests Arsenicum, Lachesis, Natrum muriaticum, Nitric acid or Taraxacum.

A *dry red* tongue cracked at the tip points to Lachesis, Rhus tox., Sulphur or Kali bich.

A *dry* tongue, without thirst, Bryonia or Pulsatilla.

A *soft* tongue, with imprints of teeth suggests Mercurius, Rhus tox. or Stramonium.

A *clean* tongue suggests gastric and other derangement and Cina or Digitalis.

A *trembling* of the tongue suggests Lachesis.

A *trembling* of a heavy tongue suggests Lycopodium.

An involuntary *darting* of the tongue, out of the mouth, and moving it between the lips to and fro also suggests Lycopodium.

Perfect *paralysis* of the tongue indicates Baryta carb.

TONGUE-TIE.

Under the tongue there is a fold of membrane called the frænum linguæ, which connects the tongue with the floor of the mouth. Tongue-tie exists when the attachment of the frænum extends along the under surface of the tongue to its tip. But this condition is extremely rare, and seldom gives rise to any real incon-

venience. The difficulty of speech with which it is sometimes associated proceeds from deeper causes, involving the sensorium. When, however, the attachment of the frænum is very thick and extensive it may form a mechanical obstacle to sucking, by rendering it impossible to produce the necessary vacuum in the mouth. When, therefore, any difficulty of sucking exists, the state of the frænum linguæ should be examined, and, if necessary, divided. This simple operation may be performed by pressing upon the frænum with the finger nail. In this way it is torn and does not bleed as in cases where it is cut.

SWOLLEN TONGUE.

The tongue is sometimes swollen violently from cold and from the effects of Mercury. It may come on in the night after getting wet and in the morning the child is in distress because it cannot shut its mouth. It cannot eat and is in danger of starving as well as suffocating.

If it is caused by Mercury, then Chlorate of Potash, diluted Creasote, or Carbolic acid will help to lessen it. The same is true of vinegar or Nitric acid. If caused by cold, Mercurius will quickly reduce it to its natural size. Beef tea should be given freely and the child quieted by careful attention. The wise mother will summon a physician if one is within reach.

THRUSH, OR FIRST SORE MOUTH.

This disease, the babies sore mouth, is an inflammatory product, consisting of numerous minute vesicles,

resulting in white patches, on the lining membrane of the mouth and throat. The white patches are now known to be certain microscopic parasitic plants—the Leptothrix buccalis, and the Oidium albicans—the sporules of which increase with great rapidity. There is also an increased formation of epithelial scales. The unhealthy secretions of the mouth, particularly when acid, form a nidus for the vegetation.

The causes are : Unhealthy character of, or insufficient breast-milk; unsuitable quality or quantity of food given to infants fed with the bottle or spoon, neglect of general cleanliness, bad drainage, etc. The disease also occurs during the course of measles, entero-colitis, and consumption; it is then generally indicative of an early fatal termination.

There is generally some febrile disturbance; the child is fretful, often refuses the breast on account of pain experienced in sucking; there is usually vomiting, and a thin, watery diarrhœa, caused by deranged intestinal secretions. The local symptoms consist of innumerable white specks, like little bits of curd, which are sometimes so connected as to form a continuous, dirty, diphtheritic-like covering over the tongue, gums, palate, and inside of the cheeks and lips. In severe cases, vegetations line the whole interior of the mouth, and extend even to the fauces and down the gullet; the nates also become red and excoriated by the acrid secretions.

The treatment is prevention, hygienic and remedial. In children otherwise strong, thrush, which is caused

by improper food or want of cleanliness, may be readily cured by one or more of the following remedies, and by correction of the faulty hygienic condition. If it occurs as a complication in the course of an exhaustive disease, or after a lengthened course of improper food, in which the digestion and assimilation of nourishment must be necessarily imperfect, the prospect of recovery becomes proportionately diminished. Diarrhœa, too, is by no means infrequent, especially in feeble children, and increases the gravity of the case.

The chief remedies for this disease are Borax and Mercurius. The latter is perhaps more often employed than the former. The medicine selected should be given three times a day.

Dark color of the patches; offensive odor from the mouth; severe diarrhœa and great constitutional prostration, Arsenicum should be given.

Child's rest is much disturbed, ptyalism, the sore mouth bleed freely, Borax should be given.

Dribbling saliva, offensive breath, diarrhœa; if administered when the white specks first appear, it is often alone sufficient. Mercurius solubilis is preferred.

The child's mouth may be washed with a weak solution of Borax (ten grains to one ounce of water), by means of a soft brush, two or three times a day. Before using the lotion the mouth should be well cleansed with a piece of linen rag squeezed out of warm water. Condy's fluid and water, one-half teaspoonful of the former to a tumbler of water, or equal parts of vinegar and water, may be substituted for the Borax in

some cases. Sage and honey is a favorite domestic remedy.

A point of first consideration is suitable diet. If thrush be distinctly traceable to any disease in the mother which cannot be quickly cured, the infant should be at once provided with a wet nurse, or fed sugar of milk, or cow's milk, or cream, diluted with water.

Every variety of starchy food is unsuitable for an infant, and no food but breast-milk, sugar of milk, or cow's milk or cream diluted, should be used. Cane sugar, which speedily ferments and is favorable to the development of the disease, is not to be allowed. Strict cleanliness is particularly necessary. After each meal the mouth should be washed, to prevent the accumulation of milk about the gums. This simple measure will often prevent the development of thrush. In like manner, the mother's nipple should be cleansed each time after giving it to the infant. Well ventilated rooms, and abundance of out-of-door air, every day, in suitable weather, will prove of extreme value, rendering the secretions more healthy, and raising the tone of the general system.

In convalescence, and when there are eruptions on the skin, Sulphur is needed.

APHTHÆ OR CANKER OF THE MOUTH.

This is the common canker sore mouth and is quite a different disease from thrush. Small ulcers about the size of a split pea are found here and there in the mouth, usually on the cheeks. When they come on

the lips and tongue, they render feeding difficult and so painful that the child will refuse all food. It is usually due to derangement of the digestive organs, chiefly the stomach and is most frequently met with in the fall of the year. Sometimes these canker sores are quite numerous and get quite large. It is then called ulcerated sore mouth or ulcerous stomatitis.

The mouth should be let alone, even water causes smarting if the disease is very severe. There is usually a constant "drooling" that keeps the mouth well washed out. Cream is the blandest form of food that can be taken. Milk porridge may agree with a child. Pure molasses is a very soothing application and is best for an infant. Glycerine may be used here, but it should be very much diluted. The best remedy here is Mercurius, sometimes Chlorate of Potash works better. Sulphuric acid very diluted is an excellent remedy in some cases. Borax 3 in powder is often valuable in mild cases. Hydrastis (Golden seal) is also an excellent remedy as it aids digestion as well as cures the mouth. Nature helps the cure by suspending the desire for food. Do not be alarmed if the child does not take food for several days.

INFLAMMATION OF THE MOUTH.

The symptoms are: Heat, redness, dryness, and ulceration of the mucous membrane of the mouth; slight swelling and pain of the tongue, cheeks, gums, and palate; fœtid breath, and salivation may also be present.

In the treatment of this disease the mouth should be moistened frequently with water or thin barley water, or with Glycerine and water (one teaspoonful of Glycerine to four of water).

This disease is most frequentlv amenable to Kali chloricum or Mercurius, but other remedies are sometimes called for. A dose of the medicine should be given three times a day, in water if possible.

Swelling, dark redness, and soreness of the tongue, gums, and cheek; ulceration of the lips and tongue; tenacious mucus in the mouth, call for Hydrastis.

Great soreness, fetid breath, and ulceration; especially after the Allopathic use of Mercury, give Kali chloricum.

In slight cases, fetid breath, and an abundant flow of watery saliva, give Mercurius solubilis 3x.

CANCRUM ORIS.

A sloughing or gangrenous ulcer of the mouth, occasionally occurring in ill-fed children from two to six years old, residing in low, damp situations, or living in overcrowded rooms and breathing impure air.

The inflammation generally begins at the edges of the gums opposite the incisors of the lower jaw; the gums are white and spongy, and separate from the teeth, as if Mercury had produced its specific effects. Ulceration begins and extends along the gums until the jaws are implicated; and as the disease advances, the cheeks and lips swell, and form a tense indurated tumefaction. The teeth are apt to fall out, and the

breath to become intolerably fetid, from a gangrenous condition. There is generally enlargement and tenderness of the submaxillary glands. In severe forms of the disease, the destructive process rapidly extends, so that in a few days the lips, cheeks, tonsils, palate, tongue, and even half the face may become gangrenous, the teeth falling from their sockets, a horrible fetid saliva and fluid flowing from the parts (Aitken).

The gums, teeth, and mouth should be frequently cleansed with a mixture of Permanganate of Potash one part, and water one hundred parts, or a weak lotion of Carbolic acid and water (about ten drops of the former to a tumbler of the latter). Strong beef tea, raw eggs beaten up in milk, and occasionally wine, are generally necessary.

The best remedy for this affection is generally Mercurius. A dose may be administered three or four times a day. Next to Mercurius, Muriatic acid has been found most efficacious.

In extensive disorganizations of the mouth, with extreme prostration, Arsenicum is needed.

Muriatic acid is to be used when the disease is associated with other diseases, such as measles, pneumonia, etc.

Sulphuric acid in rapid spread of ulceration.

DENTITION AND ITS DISORDERS.

There are two sets of teeth: the first—milk teeth—appears during the first two years of life, and falls out about the seventh or eighth year. As the first set falls

it is replaced by the permanent, which is not completed till adult life.

The appearance of the twenty milk teeth, as those of the first dentition are termed, does not take place in an uninterrupted sequence, but in groups, separated by intervals of weeks and months. The following is the usual order and time of the cutting of the several groups:

Group I. Between the fourth and seventh months of life, the two lower middle incisors appear almost simultaneously, whereupon a pause of three to nine weeks ensues.

Group II. Between the eighth and tenth months of life, the four upper incisors appear, following shortly upon each other, at first the two central, then the two lateral. The second pause amounts to from six to twelve weeks.

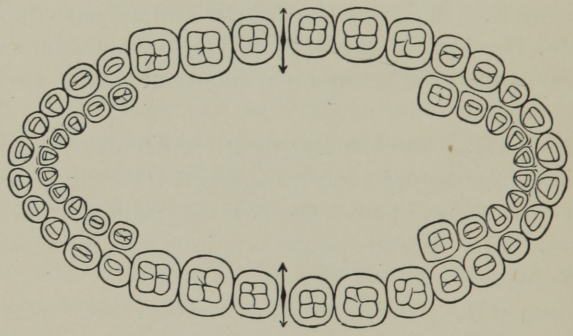
Group III. Between the twelfth and fifteenth months of life six teeth appear at once, namely, the four first molars, and the two lateral incisors; generally the molars in the upper maxilla first, next the lower incisors, and lastly the molars of the lower jaw. A pause until the eighteenth month ensues.

Group IV. Between the eighteenth and twenty-fourth months of life, the canine teeth cut through. (The upper ones are called eye-teeth.) Again a pause until the thirtieth month ensues.

Group V. Between the thirtieth and thirty-sixth months, the second four molars finally make their appearance. This concludes the first dentition.

At the sixth year another set of four molars appear,

and at the seventh the first teeth begin to drop out. The incisors are replaced by incisors, the canines by canines, while the eight molars are replaced by eight bi-cuspid teeth, these with the six year molars make twenty-four teeth. About the twelfth year another set of molars make their appearance, and at twenty, four more molars called the wisdom teeth complete the teething process.



We here give an excellent illustration of both sets of teeth of both jaws. The smaller inside row of teeth are the baby teeth. Compared with those of adult age, gives one a good idea of the growth of the jaw.

Second dentition is sometimes a painful process from two causes, deficient teeth food and an excess of bony material.

Sometimes a third set of teeth or portions of a set have appeared late in life. Cases are on record (Otto Lehrbuck der Path. Anatomie) where the teeth were wholly wanting. One case had neither teeth nor hair.

Many divergencies from these rules will be met with, as children may be born with one or more of their teeth already cut, or the teeth may appear earlier than

usual, or out of the usual order. In some families the upper incisors always appear before the lower, or one of the molars or the canine teeth precede the incisors; but these irregularities are of no importance. Delayed appearance of the teeth is, however, of greater moment for it generally indicates some fault in nutrition.

DIFFICULT DENTITION.

Frequently the teeth are tardy in appearing and still give rise to no trouble. It is my firm conviction that natural teething should cause little distress. The symptoms of difficult teething are, as a rule, very plain.

The fingers in its mouth and a look of agony will point to the trouble. To be sure these symptoms are due to the teeth alone, all the facts should be collected. During fever and severe diseases of the lungs, bowels, or brain we may have the child putting its fingers to the gums. The ache here will cause the child to whine and start with sudden pain. If the pain is in the bowels it will be prolonged and half suppressed ; if in the head it will be more of a shriek, while if it is in the lungs it will accompany a cough. Teething distress does not give rise usually to much fever. When it sleeps the head may be warmer than usual. The feel of the tooth, hard, swollen and hot,

should alone decide. Rubbing the gums with the finger dipped in cold water will by lessening the amount of blood pressure about the tooth, be a very convenient method of relief. Mothers should remember what is well known to Pædologists that a child is usually worse towards night, and that a teething child should be soothed before putting it to sleep. A child that cries or worries itself to sleep will be apt to have fever and start in its sleep from sheer nervousness. Bathe its gums and head, soothe it gently, being careful not to nurse it too much, and it will be apt to sleep well.

If it wakes crying, or in affright, soothe it again with a drink of water and give it the kindest most watchful care. If the tooth is well advanced it may be "rubbed through" on a rubber ring or with a thimble, for example, or better yet the corner of the finger nail may be gently and firmly crowded against the edge of the advancing tooth. With the front teeth the pressure should be upon the middle of the crown of the swollen gum, while with the large back teeth the outer edge should receive the pressure for they cut through first, then the inner edge. Sometimes both of these edges cut through leaving the gum stretched across the crown. Now the best thing to do is to give the child a hard crust of bread to eat. This may be given to the

youngest teething child to bite upon. It is better than any other article, for it also brings the mouth glands into activity and the saliva swallowed is partly digested.

The swallowing of the profuse saliva is sometimes the cause of severe and persistent diarrhœa. In the case of Prof. P. P. Bliss' youngest child, recorded in my large book, the diarrhœa persisted for months, until discovery was made that it arose from swallowing the saliva. He was taken off from milk, put onto starchy food and with the proper remedy (Kreasote) he made a rapid recovery.

Although dentition is a natural process of development, in many children it is a trying one, and may possibly call into fatal activity latent tendencies to disease. Indeed, in the census report for 1860 no less than 4,909 deaths are ascribed to this cause. In 1870 the number fell to 3,247, due to a more enlightened diagnosis. In consequence of the increased activity and excitement in the vascular system, combined with the nervous irritation which sometimes attends dentition, local or constitutional disturbances are likely to arise in delicate children. Rickets, or imperfect bony development, for example, greatly influences the progress of teething. If this sets in previously to the commencement of dentition, the evolution of the teeth may be almost indefinitely delayed; or if some are already cut, further progress may be arrested. Rickety children of eighteen months or two years old may often be seen with very few teeth, and those few black and carious. In tuberculosis and congenital syphilis, on the other hand, the

teeth are cut early, and before the frame is sufficiently consolidated to sustain the necessary changes.

The symptoms present are usually: Cough, with wheezing breathing; restlessness, starting as if in fright, or interrupted sleep; sudden occurrence of febrile symptoms; hot, swollen or tender gums, and increased flow of saliva; various eruptions on the head or body; derangement of the digestive organs—sickness, diarrhœa, or constipation; and sometimes spasms and convulsions. Diarrhœa and other symptoms of indigestion are most frequent in the summer and autumn, and when, therefore, children are most exposed to sudden changes.

The exciting causes are irregular feeding; excessive feeding; improper quality of food. Disordered dentition is often coincident with a change of diet from the mother's milk to various articles which are unsuited to the age of the child. Other causes are keeping the head too hot, too little out-of-door air, etc. By such means the nervous system is disturbed, the stomach is disordered, and restlessness, crying, colic, and even convulsions follow. Inflammatory affections of the gums, or disproportion between the jaw and the number and form of the teeth, are also causes of suffering. Frequently these causes may be avoided, and the sufferings of dentition reduced to a minimum.

Not a few cases of disordered dentition are referable to the mother. Worry, fits of anger, overheating, fatigue, etc., may so poison the blood of the mother, that, unless the milk be first withdrawn, and nursing

suspended until physical and mental calm be restored, convulsions, fever, diarrhœa, or even sudden death may result.

For most cases of difficult dentition, Chamomilla is an excellent medicine, and in the absence of fever should be considered. It may be given every two or three hours.

Aconitum may be given for feverish restlessness, with inflamed gums.

Calcarea carbonicum in cases complicated with slimy diarrhœa; in lymphatic children.

Chamomilla, if bilious purging, intestinal irritation, cough, nervousness, and fretfulness.

Kreasotum in cachectic children, agitation and wakefulness, gum inflamed, constipation, teeth decay as soon as they appear.

Other remedies may be needed.

Arsenicum, with much emaciation; Belladonna, flushed face, nervous irritability; Mercurius solubilis, green or bloody motions; Podophyllin, pain in paroxysms, with prolapsus ani; Silicea, much perspiration, about the head when falling asleep.

Regulations necessary. Regularity in the times of feeding and sleep; correction of any habits in the mother which may affect the child unfavorably; restriction to suitable quantities of food at one time. Neave's Farinaceous Food, prepared according to the directions supplied with it, is generally the best artificial diet for children. Keeping the head cool and the feet warm, washing the child daily in cold water, and allowing it

to be much in the open air, tend to prevent determination of blood to the head.

DECAY OF THE TEETH.

The teeth are so important that it is impossible to over-estimate the necessity of exercising due care in their management during the whole period of childhood. A good set of teeth is one of the best guarantees a child can possess of good digestion and prolonged health; and this blessing it is generally possible to attain by the exercise of early care. A large proportion of children, including persons of all ages, suffer from a more or less deteriorated state of the teeth and gums. Dentists of long practice have noticed the increasing prevalence of carious teeth.

The early decay of the teeth is due, in a great measure, to preventable causes.

1. In some children the jaws are so small or irregular that there is not sufficient room for proper development. The consequence is that they overlap, and, pressing against each other, damage the enamel. Moreover in this condition there is greater probability than in a normal condition that particles of food will be retained in the mouth, and decomposing, the formation of caries will be favored.

2. Insufficient use of the teeth is consequent on the kind of food taken, and on its preparation. The prevalent use of sops and of soft new white bread is productive of much evil. Nothing is more suitable for a child, with the incisors cut, than a crust of stale bread made

from entire wheat flour, or a bone, on which to exercise and harden the teeth and gums. The result of insufficient use of the teeth is that the jaw bones and muscles are imperfectly developed, the gums become soft and spongy, the teeth grow irregularly, are easily loosened, and drop out. For it is with the teeth as with all other organs and functions of the body, the less they are employed for the purposes to which they are assigned, the more rapidly they become enfeebled and degenerate. Resistance gives strength, and necessitates the formation of that hardness of texture which wears well even when the enamel is gone.

3. Whatever enfeebles the general system enfeebles every part of it. If the standard of health be lowered by disregard of hygienic measures, or in any other manner, the teeth will suffer; they will decay for want of sufficient nutrition.

The treatment may be inferred from the causes already mentioned. To prevent the crowding of the teeth, a skillful dentist should be consulted, who will remove superfluous teeth, selecting for extraction any that may be hopelessly decayed, or those most liable to early degeneracy, viz., the first permanent molars. Personal appearance has been improved by the greater regularity of the teeth; for the vacancies occasioned by removals have been quickly filled by the adjustment of the teeth to the vacant spaces. To prevent deterioration, we recommend a return to the primitive custom of eating whole wheat bread. It gives the healthy stimulus which the teeth and gums require; it is more

nutritious to the system; and it supplies in considerable quantity the silica and phosphates from which enamel and dentine are formed. We also advise parents to allow their children the vulgar gratification of nibbling a bone now and then. Sweets should only be allowed in moderation and after meals, for they injure the teeth; not, as is usually supposed, by direct chemical action, but by disturbing digestion, and vitiating the secretions of the mouth. Very acid fruit acts both directly and indirectly upon the substance of the teeth; strong acids, some of the preparations of iron, and hot drinks are also prejudicial. Cleanliness is essential to the prevention of decay. The child should early learn the use of a tooth brush. The bristles should be moderately soft, and not too thickly set. Where food is liable to become entangled between the teeth, the brush should be used after every meal. Not only animal food, but particles of white bread originate degenerative changes, and should be removed. The primitive tooth brush used by natives of South Africa to preserve their white teeth is the finger with which they scrub the teeth after every meal.

Brushing with simple water should be commenced directly after the teeth appear, and nothing else is necessary in the case of children. The brushing should be with a rolling motion from above downward. Slight friction is beneficial to the gums, the removal of decomposing particles of food tends to avert premature decay, and cleanliness is as healthful in the mouth as in any other part of the body.

Tooth powder is unnecessary except after the teeth have been neglected; it may then be required for a short time to remove carious incrustation. In any case the tooth powder should not be harsh or medicated. Such as feels rough and gritty when rubbed between the thumb and finger should not be used, as it will scratch and injure the enamel. Finely pulverized chalk is one of the best powders.

Another method of preserving the teeth is the one so forcibly recommended by Mr. Catlin—sleeping with the mouth shut. Children should be initiated into the habit at the very earliest period. They should also be taught to keep the mouth shut as much as possible during the waking hours. This habit contributes much to the end contemplated. Finally, a simple style of living, fresh air, exercise, and cleanliness during the whole period of childhood will facilitate healthy growth, and aid largely in the preservation of the teeth.

For a sour state of the secretions of the mouth and stomach, with frequent vomiting, soreness of the gums, give Kreasotum.

Looseness of the teeth, retraction and bleeding of the gums, excessive flow of saliva, fetid breath can be cured by Mercurius.

A soft, crumbly state of the teeth, associated with symptoms of rickets, call for Silicea.

Blackness of the teeth, paleness, swelling, soreness and erosion of the gums, looseness of the teeth, are marked symptoms for Staphysagria.

TOOTHACHE.

Toothache is often a distressing ailment of childhood, and is far from being uncommon, especially during the decay of the first teeth, which often occurs, and they should be treated the same as if they were the permanent ones. The most frequent exciting causes are sudden changes of temperature, indigestion, general ill-health and irritation of the bare nerve by particles of food.

The application of heat will sometimes give relief; in other cases, when the temple throbs, cold water will ease the pain. Electricity frequently gives speedy relief. Using the negative pole to the cheek near the aching tooth, and the positive pole to the back of the neck. Improvement ensues in a few minutes. Consult the previous article, or a skillful dentist if it is one of the milk teeth that aches.

Pain in the *right side* extending to the temples, redness of the face, burning, throbbing, and heat of the head is promptly relieved by Belladonna.

Unbearable paroxysms of pain on the *left side*, nightly aggravation, redness of one cheek and paleness of the other, is as quickly relieved by Chamomilla.

Pain starting from loose or decayed teeth, occurring in the night, accompanied with perspiration that gives no relief; pain extending to the ears, Mercurius sol. 6.

Pain from indigestible food, fat, pastry, etc.; pain on the left side of the face, Pulsatilla.

THE MOUTH GLANDS.

The importance of a knowledge of the mouth glands is evident. There are two glands under the tongue (sublingual) two under the angle of the lower jaw (submaxillary) and two just in front of each ear (parotid). One of the glands under the tongue sometimes becomes enlarged from obstruction of the outlet and a tumor is found under the child's tongue sometimes seriously interfering with its use. This is called ranula. This may be pricked with a needle and the fluid escapes. These glands secrete a substance which we call saliva. They are very active during digestion or at the smell of savory food when one's "mouth waters." Sometimes the submaxillary glands become very large during dentition and may even gather and break.

When these glands are very active in the young child the saliva runs out of the mouth and the child is said to "drool." Drooling when profuse should be checked as it tends to interfere with the teething process. The best remedies are Kreasote and Mercurius, (see Mumps). A child that drools much should be given cracker to eat or to nibble at. This should be given at meal-time. Saliva aids the digestion of starch.

At times the parotid glands become enormously swollen, giving rise to the well known disease "mumps" which we shall describe separately. Kernels on the neck is quite different (see Absorbent System). These

mouth glands may be enlarged from disease elsewhere, as in typhoid, as well as from cold, etc.

MUMPS.

This is an inflammatory swelling of the salivary (parotid) glands beneath and in front of the ear, frequently with pain, soreness, and difficulty in moving the jaws. The glands sometimes attain a very large size; the enlargement may be on one side only, or as it diminishes may show itself on the other side.

A specific morbid miasm, generated during peculiar conditions of the atmosphere is supposed to be the cause. It spreads by contagion. Cold and damp favor its appearance. It is also liable to occur during the course of severe fevers, in cholera, and from large doses of Iodine and Mercury. It often occurs as an epidemic, particularly in cold, damp weather; is more incident to children after the fifth year than to adults; and only occasionally attacks the same person twice. It is very infectious; children take it from their mates and playfellows.

At first there is a feeling of stiffness and soreness on moving the jaw, and the child complains of the discomfort of eating; indeed, the pain caused by eating or even drinking is sometimes agonizing. The glands under the ear soon begin to swell, and they continue to be sore and painful, with more or less fever and headache, for about a week. There is little danger, although there are instances in which, from exposure to cold or from cold applications, the disease has been transmitted

to the testicles in boys, and to the mammæ in girls. Sometimes the brain becomes affected.

The child should be kept in a warm room, but not confined to bed. The parts may be fomented with hot water several times a day, and in the intervals covered with a flannel bandage. The patient should be protected from cold, damp, and excitement. In this disease, as also in quinsy, semi-liquid food is swallowed with much less suffering than either liquid or solid food, and hence should be chiefly used.

Mercurius, Bryonia or Pulsatilla are the chief remedies employed.

If there is fever, give Aconite every two or three hours for three or four times, then Mercurius sol. 6 every three hours.

Pain and fever, give Aconitum.

For pain, erysipelatous redness of the skin, tendency to metastasis to the brain, Belladonna.

For foul tongue, increased flow of saliva, Mercurius solubilis.

When metastasis takes place to the testicles or mammæ, give Pulsatilla.

The application of Iodine or Mercurial ointment is resorted to by the Old School. Inunction with oil is also prescribed.

CHAPTER III.

THE STOMACH AND ITS DISORDERS.

The shape of the infant stomach is supposed to facilitate vomiting when overloaded, but a careful examination of many infantile bodies convinces me that there is not so much difference between the shape of the infant and adult stomach. The position the stomach occupies, however, is different. The large liver lying on the right side crowds the stomach over to the left side up under the ribs. The larger the liver the more the stomach is crowded over, while the smaller the liver the more nearly the stomach will lie in the centre, as it does in the adult. The liver is larger in the fleshy alkaline child, and smaller in the thin, acid subject. A fleshy child cannot distend its stomach like the lean one can. If it does the liver crowds it out of the child's mouth particularly if the little one is laid on its left side. This sort of vomiting is quite different from that due to disease of the stomach. When the mother has found that her baby has vomited, she should know how it has lain. The same kind of vomiting may occur and from the same cause, *i. e.*, pressure upon the stomach when the child is dandled after a hearty meal. It is said that a "spitting baby" is a healthy baby, but nature never intended the stomach to be emptied in that way. There are four forms of stomach derangement that every mother should be familiar with, to say

nothing of indigestion which is an accidental affair. I refer particularly to acute and chronic gastric catarrh and acute and chronic gastritis.

ACUTE GASTRIC CATARRH.

"Spitting" is the first symptom of this disease in an otherwise healthy infant. First it throws up the milk in small curds, sometimes there is only a little water and again there is water curds and stringy mucus or phlegm. The longer the trouble continues the more phlegm there will be present. The child seems to throw up nearly all it takes, and still it thrives, but it wants to nurse oftener than usual. It may worry some but usually it is a good baby.

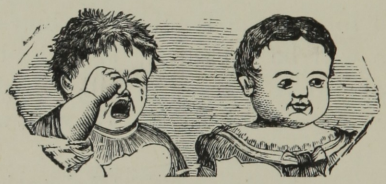
The cause is usually rich milk. The mother is fleshy and has plenty of milk. I was consulted by a physician for a case of this kind, both mother and child were large and plump. The mother ate very hearty. She was directed to take more nitrogenous food so as to change the milk. The child was ordered a drink of water now and then. Kali bichromicum was the remedy given for the stringy mucus in the vomited milk. This helped for a time, then Calcarea carbonica completed the cure. A little lime water given to the child before nursing, would, perhaps, have done as well, but the cause had to be removed by changing the mother's diet.

This form of trouble in older children usually follows an attack of indigestion, to which the reader is referred.

This disease is often so insidious in its onset, that it has assumed a chronic form before it is recognized.

CHRONIC GASTRIC CATARRH.

A chronic catarrhal inflammation of the stomach is of frequent occurrence in children. Unlike the acute form there is rarely any vomiting, but the chief manifestation of this trouble is the enormous appetite of such children. They want to eat all the time, and then



they are in distress and are irritable and cross. If young they must have food at least once in two hours, sometimes they cannot wait even that long, but must have it oftener. At night they must be fed often, and then spend most of the time rolling and tossing, scarcely sleeping a consecutive hour night or day. They are wakeful and very fretful, and often have severe spells of crying as if in great pain. Notwithstanding all the child grows fat.

This is one of the most perplexing cases that is met. The friends declare it is only temper, and that the thing it needs is only a good spanking, but the maternal heart will not allow such harsh treatment, she knows that "something ails the child. It cannot be well or it would sleep better or be more quiet." Possibly the

physician, who only sees it a few moments at its best, decides "there is little or nothing the matter," or possibly "it is its teeth." We pity such a child. God help the poor mother! This sort of trouble is easily recognized, and the management plain and successful.

The appearance of the tongue will help us to recognize this disease, if there is still any doubt. The tongue is broad, not very thick, and rather pale, while the tip is smooth, or the papilla or elevations look raw. Usually there is diarrhœa with it, but not always. Sometimes the catarrhal inflammation extends to the bile duct, and the child will then have "bilious vomiting"—a symptom that is often misleading.

The course of treatment to pursue in those cases is to change the food. Usually it is too rich as well as fat, or it is hard to digest. If the baby is nursing the mother should be fed with fluids so as to increase the quantity of milk. Oatmeal gruel is one of the best articles. Consult also Maternal Feeding.

If the baby is bottle-fed, the amount should be limited, and it should not feed at night. I remember one case where a child four years old drank a cup of milk twice during the night. This was taken away, and although she raised the neighbors the first night, the habit was soon broken; her stomach got its needed rest and she was soon all right. It will take a little firmness to break up the habit of frequent eating. Water or mild "Cambric tea" may be given instead, for usually there is a craving for fluids. These cases are usually plump children who need lots of water. In

Homœopathic hands, Nux vomica, Cina, and China are the chief remedies. With the Nux cases they have little appetite in the morning except awaking about four o'clock in the morning and wanting food. They eat heartily during the day, and it is hard work to get them to sleep at night. The Cina cases will eat any time, pick the nose, are cross and fretful, and are often troubled with diarrhœa at night which smells badly. The China cases are pale, belch wind after eating, have diarrhœa and much wind; food passes undigested. Where the food or milk is very fat, Pulsatilla may be given to both mother and child if it is nursing.

It is a common practice to give these cases small doses of Quinine, Bismuth, or some worm destroying preparation. It is this class of children that are supposed to have worms and are the victims of vile drugging. Remove the cause, cure the disease, and the worm symptoms will rapidly subside.

ACUTE GASTRITIS.

Acute inflammation of the stomach is of frequent occurrence among children. The vomiting, the red tip of the tongue, and the evident pain after eating, are the chief features of this disease. When very severe the features become pinched.

When the milk is rejected immediately after nursing or feeding, the milk being curdled, it is of the simple form and is caused either by too frequent feeding or over-distention of the stomach. Vomiting of uncurdled milk indicates debility of the stomach, and requires a

carefully regulated diet, smaller quantities of food at a time, and at shorter intervals.

The chief causes are: Repletion; improper or badly prepared food; premature weaning; the use of starchy food before the child is able to digest it. Wet-nurses unable fully to supply the wants of the suckling have been known to supplement the breast-milk by arrow-root, corn flour and other indigestible food, to meet the deficiency. In such cases the use of the microscope reveals starch granules, and thus enables us to detect the cause of the derangement. Impure air, too little sunlight, want of cleanliness, and other bad hygienic conditions are fertile sources of gastritis. The crowding of a whole family in one room, or the crowding of many children in a small, badly-ventilated, ill-lighted, and cold room, is not an uncommon cause of the derangement.

Arsenicum is the chief remedy and is indicated by vomiting of food and drink as soon as taken. Thirst for small quantities of water.

Æthusa.—Vomits milk as soon as taken. Great prostration.

Antimonium crudum.—Thickly-furred white tongue; great thirst; painfulness of the stomach to pressure; nausea; eructations; poor appetite; vomiting of bile, with diarrhœa.

Ipecacuanha.—Aversion to food; constant nausea and vomiting of mucus. This is especially suitable when the breast milk disagrees with the child and is returned.

Nux vomica.—Aversion to food and drink; the matters vomited are sour or fetid; vomiting of green bilious matter; constipation.

Pulsatilla.—Simple vomiting from indigestible food; or when due to debility of the stomach.

A change of diet is generally necessary in fed or weaned children, and a change of the mother's diet, or of her habits, in the case of those who are nursed. Suckling infants should be nursed at regular periods, and not permitted to suck too long at one time, the amount permitted to be swallowed being regulated by the previous meal. If that has been rejected, the quantity at the next must be lessened. In some cases the child should have a wet-nurse or be fed as elsewhere directed, or with cow's milk and lime water, giving such quantities as can be retained. In the case of older children much care is often necessary. When a disposition to sickness has been excited the stomach will only bear small quantities of food at a time—very much smaller than are commonly given; while warm food is sometimes much better tolerated than cold. Small pieces of ice placed on the tongue tend to allay vomiting in this disease, and are usually very grateful to the little patient. After vomiting, it is better to make no attempt for an hour or two to give any kind of food or drink. After some rest, a teaspoonful of cold water may be given, and followed in ten or fifteen minutes by a very little cold milk and water, or whatever else may be suitable. Another point, of considerable importance during sickness, is to avoid moving the child

hastily or roughly in giving it food, or raising it more than is absolutely necessary out of the lying posture after eating.

After the child is a week or two old, during favorable weather, abundance of pure open air and sunlight will improve the tone of the digestive organs. Even as soon as the infant is one or two weeks old it may be taken out-of-doors. Strict cleanliness is necessary, and the whole body should be oiled at least once a day and not bathed in cold or tepid water oftener than twice a week. The child should be warmly clad, the feet especially being kept warm.

CHRONIC INFLAMMATION OF THE STOMACH.

This is a very common disorder, and one that every mother should be able to recognize at once. It is a disease that has received very little attention even from the medical profession. The author delivered an address on this subject before a medical body, and an extract of it was widely copied by the medical and secular press of the country. It has, he is assured, been the means of doing much good.

When a mother comes with a pale, delicate child, saying: "He has no appetite; I don't see what he lives on; you can count every bone in his body, but 'his face is the best part of him;'" and if, with this statement, I find a red strawberry tongue and constipation, the inference is that it is a case of chronic inflammation of the stomach. To be positive, other facts must be ascertained. This is perhaps one of the most easily-over-

looked diseases that children suffer from, and at the same time is the most common.

Sometimes there is chronic vomiting which comes on slowly and without fever, differing in these respects from acute gastritis, which is accompanied by heat of skin, thirst, and a loaded tongue. At first the child vomits, at irregular intervals, curdled milk of a strong sour smell, showing by its yellow or green tinge the presence of bile. After a time the matters vomited look like clear water mixed with food. The abdomen is full, hard, and tender; sour or fœtid eructations occur, and the bowels are obstinately constipated. The child grows thin, pale, and fretful; and the fontanelles sink considerably. Occasionally diarrhœa intervenes, then leaves the bowels as obstinate as ever; the motions being passed with great difficulty, and consisting of light-colored, hard, round lumps, covered with tough

mucus. The tongue is now coated on the back part with dirty-yellow fur, and dry, while the tip is fiery red; the breath smells sour; the lips are red, and lack moisture; the mouth is parched, and the lips appear to project.

This condition may continue for weeks, or even months, or it may slowly pass into the stage where vomiting occurs much more frequently, and is occasioned by the slightest movement. The milk is then rejected uncurdled; emaciation progresses rapidly, the skin becomes harsh, dry, and flaccid, the features pointed, and the knees are drawn up on the abdomen. The temperature sinks very low, the child lies with the eyes half-closed in a semi-stupor; thrush appears; and the worn-out sufferer sinks to rest.

Some cases are hereditary; others follow acute attacks; some are caused by overfeeding; others due to lack of water. Other causes are: too early weaning; the premature use of starchy, irregular feeding; excitement; bad air.

Chronic gastritis with vomiting, combined with obstinate constipation, may arouse suspicion of brain disease; the following table, however, shows the differences between these conditions:

TUBERCULAR MENINGITIS.	CHRONIC GASTRITIS.
1. Seldom occurs in *children* under one year.	1. Is most frequent in young *infants*.
2. *Elevation* of temperature.	2. *Depression* of temperature.
3. Fontanelles *prominent* and frequently pulsating.	3. Fontanelles *depressed* and motionless.
4. Pulse *irregular*.	4. Pulse feeble and *regular*.
5. Abdomen *retracted*.	5. Abdomen *tumefied*.

Arsenicum is the remedy if there is dryness of the

mouth, with bitter taste and disagreeable odor; thrush; ulcerated, coated, or cracked tongue; thirst for small quantities of water often; vomiting after food or watery fluid; great tenderness and colic; prostration and emaciation; watery diarrhœa.

Calcarea carb. for chronic vomiting, with swelling and hardness of the bowels, and constipated or offensive motions. Very suitable to small or weakly children that crave pork.

Kreasotum in a case with a poor constitution, general ill-health, and persistent vomiting; early decay of the teeth.

Nux vomica is an excellent remedy in some forms of chronic vomiting, with constipation and alternate diarrhœa.

Pulsatilla for tongue covered with whitish mucus; vomiting of mucus or bile; mucous diarrhœa. Most useful for fair children with blue eyes.

Veratrum alb. for excessive vomiting, especially with watery, nocturnal or involuntary diarrhœa; slow pulse; faintness; coldness of the face, tongue, and extremities.

Compare remedies and directions for acute gastritis.

Due care should be taken that the child is properly clothed and fed. The clothing should be sufficient to secure comfortable warmth. If it has been prematurely weaned, and it is impossible to procure a suitable wet-nurse, the child should have sugar-of-milk food, with equal parts of fresh cow's milk and water; or fresh whey and cream. In obstinate vomiting, the food should be given cold or cool. Much injury often

results from careless nurses giving food too hot. The body of the child should be twice a day rubbed with olive oil, until the appetite is ample and the child fleshy. The greatest cleanliness should be observed, and all vomited matters or soiled clothes removed immediately.

In case of extreme prostration, cold beef-tea may be given in small quantities, frequently repeated. For children over twelve months old, the whites of one or two eggs may be thoroughly mixed with this liquid. These children should have plenty of water, a light supper, and should sleep early and sleep long and sound.

INDIGESTION.

Indigestion is an accidental circumstance, and its chief symptoms are:

Loss of appetite; flatulence; nausea and eructations of acid or bitter fluids; furred tongue; foul breath; pain and weight at the stomach, worse after eating; vomiting; irregular action of the bowels; hiccough; headache; disturbed sleep, etc.

The chief causes are irregular feeding; unsuitable food; insufficient fresh air and exercise; exposure to cold and damp, etc.

Indigestion will mostly succumb to Nux vomica or Pulsatilla, the former being more frequently called for in male, and the latter in female children. Three doses in the day are usually sufficient. Other remedies may be indicated as follows:

Antimonium crudum.— Loss of appetite; white,

furred tongue; eructations tasting of the food; vomiting; alternate relaxation and constipation; pimples on the face.

Arsenicum when there is persistent retching; vomiting of all food or drink taken.

Bryonia.—Uneasiness after food; foul eructations; nausea or vomiting; headache; constipation; pain under the shoulders.

Carbo vegetabilis.—Heartburn; foul flatulence; headache.

Chamomilla.—Sallow skin; yellow tongue; thirst; colic; sour breath and vomiting; greenish diarrhœa; irritability; toothache. This is a sovereign remedy for this kind of infantile ailment.

Hepar sulphuris.—Heartburn; dislike to food; nearly all kinds of food disagree; craving for unusual kinds of food, wine, etc.

Nux vomica.—Pain and fullness of the stomach; eructations or vomiting of sour or bilious matters; sallow skin; confined bowels.

Pulsatilla.—Indigestion from pastry or rich food; heartburn; foul taste; mucous diarrhœa. Most suited to fair, light-haired children, especially girls.

Accessories.—Attention to diet, cleanliness, fresh air, daily out-of-door exercise, etc., are of great importance in preventing or correcting indigestion. A wet compress to the pit of the stomach is of great service. (See also "colic" "gastritis," "diarrhœa," "constipation," and "worms.")

CHAPTER IV.

ABDOMINAL ORGANS AND DISEASES.

We have seen that one of the first things that should be carefully examined is the abdomen to see if it is well developed, and also to see if there is anything unusual about the navel.

RUPTURED NAVEL—UMBILICAL HERNIA.

This is of frequent occurrence when the child has been thin and begins to fat up. The walls of the abdomen are not closed, and the distended bowels push through. Hernia is here manifest by a protrusion from the abdominal cavity through the navel-ring, where it forms a smooth, ovoid, tense tumor, easily returnable by pressure. It is sometimes congenital, but more frequently occurs soon after the separation of the navel cord.

It is sometimes caused by violent crying or straining of the infant, while the integuments which close the umbilical ring are but imperfectly developed.

Should there be any signs of a protrusion at birth, or soon after, a strip of adhesive plaster two inches wide and a foot long should be put over it. The skin should be puckered over the protruding portion. If the plaster cannot be obtained a circular piece of cork should be applied, somewhat convex on both sides, covered with soft leather, and secured by a moderately tight-fitting

bandage around the abdomen. A flat piece of sheet lead, or ivory, protected with soft leather, with the convex surface over the aperture, may be substituted for cork. If the pad slips off the part, it should be secured by cross pieces of adhesive plaster. If the pad is nicely applied, and continued for one or two months, a radical cure may be expected. Nux vomica at night, and Sulphur in the morning, are recommended, and probably facilitate the cure. Several cases are reported as cured with Nux, a dose at night, for three or four weeks, with only an ordinary bandage around the child.

JAUNDICE—ICTERUS.

We remember that the skin of the infant gets very red from the large amount of blood. As this subsides, about the second week, the skin assumes a deep yellow tinge, but this is not jaundice. The mucus membrane of the mouth, stomach and bowels undergo the same change as the skin. Sometimes the amount of blood thrown to these surfaces causes an inflammation that extends up the bile duct from the bowel to the liver and this gives rise to regular jaundice, a disease due to derangement of the biliary organs, characterized by yellowness of many of the tissues of the body, especially the white of the eyes and the finger nails.

The leading symptoms are a yellow tinge, first of the white of the eyes, then of the roots of the nails, next the face and neck, and finally the trunk and extremities. The urine becomes yellow colored or deep brown, and stains the linen; the fæces are whitish or drab col-

ored; there is constipation; lassitude; anxiety; pain in the stomach; bitter taste; and generally, febrile symptoms. Often the bowels are relaxed from the food not being properly digested, and occasional irritation. There are also usually depression, drowsiness, prostration of strength, and slowness of the pulse.

In addition to the causes mentioned, it may be due in older children to functional derangements, from atmospheric changes, fits of passion, or errors in diet.

In a large number of cases, Mercurius sol. 3 will meet every requirement, and unless some other remedy is very clearly indicated, it should be given every three hours.

Aconitum, for jaundice from fright or cold, with febrile heat; much pain below the ribs.

Chamomilla, jaundice caused by fits of passion.

China, if due to indigestible substances, over-exertion, cold; also when the disease assumes an intermittent character, and when large doses of Mercury have been given.

Nux vomica, for pain in the region of the liver; costiveness; sickness.

The infant needs very rich, fat food at this time. Flannels wrung out of hot water, applied to the region of the liver, relieve pain; in mild cases, the cold compress over the liver may be used with older children. Daily out of door exercise, regulation of the diet, and protection from atmospheric changes are excellent preventives.

COLIC.

Colic is of frequent occurrence in children troubled with derangement of stomach or bowels or both. If it comes on after eating, a little hot sweetened water will relieve as promptly as hot drops of any kind. If this does not relieve then it is no use to trot the child, as most young mothers will do, for that is simply adding to the agony, and no kind mother will increase the distress of her child. Pressure on the stomach sometimes relieves. In such cases a little Colocynth will help. If the child is worse lying down, and better on sitting it up, and the pain and distress comes in spells, Belladonna will soon give relief. If the child is only easy when being carried about Chamomilla is the remedy. If the pain is in the bowels then the child should be undressed, as any experienced old lady will direct and as it should always be in distressing cases of colic, and a bandage of warm water put all around its body while it lies across the knees as here illustrated. This will usually relieve

it when nothing else will. A pillow may be placed under its head and the child will drop to sleep. Colic or wind in the bowels (Enteralgia) becomes very distressing in enteritis and entero-colitis. Colic that persists means trouble, and this one symptom should not allow the mother to be misled.

INFANTILE DIARRHŒA.

The frequency of diarrhœa in early childhood, especially during dentition, its disastrous effects on the constitution if unchecked, and its large contribution to infantile mortality, especially in summer and autumn, render the due consideration of the subject of great importance. Depending moreover as it often does, on obvious and removable causes, and unaccompanied by lesions other than functional or transient, it is a disorder that well repays the application of our preventive and curative resources.

Diarrhœa in childhood presents many phases, and has been described under numerous headings—simple, catarrhal, non-inflammatory, choleriac, inflammatory, and dysenteric.

The circumstances which may develop an attack of diarrhœa are numerous, and their detection often necessitates much care; but as the cause generally influences the treatment, it should always be investigated. The most fruitful source of infantile diarrhœa is improper food, especially farinaceous, which is often most unwisely given almost as soon as the ability to swallow exists. The constant passage of indigestible starchy

masses along the intestinal canal causes irritation to the sensitive mucous lining, which sooner or later expresses itself in diarrhœa.

Sour milk is a frequent cause, especially among the poor. So is an inferior quality of maternal milk, such as of women in whom the monthly period has returned, or whose milk is otherwise deprived of its nourishment. Sugar is also hurtful, particularly when given too freely in milk when the mother is unable to nurse. When the milk is unsuitable the stools first resemble chopped eggs, and afterwards bad eggs; and the child suffers much from wind and colic, emitting flatulence which smells like rotten eggs. One of the earliest causes of this disorder is the highly reprehensible practice of some nurses, giving Castor oil or a bolus of butter and sugar soon after the baby is born. Foul air and contaminated water, the inevitable results of filth and overcrowding, are causes of an obstinate form of diarrhœa. In fact diarrhœa and infantile mortality are largely augmented by neglect of efficient sanitary measures, especially the effluvia or emanations from drains or decaying vegetables and other refuse, which may pollute the air and food, and set up irritation.

Further, heat and other atmospheric conditions, especially in summer and autumn, exercise a prejudicial influence, and directly tend to develop or increase an attack of diarrhœa.

The symptoms vary extremely, even in recent and acute attacks, from a slight, painless increase in the quantity, frequency, and altered consistence of the nor-

mal evacuations, to violent, painful, and frequent purging; liquid evacuations, perhaps several times every hour, being ejected with spasmodic force. In the latter cases the motions are green or spinach-like, resembling those produced by administration of Mercury, but assume a yellow appearance during recovery. Frequently they contain the casein of undigested milk in the form of numerous white specks. There is also generally sickness, thirst, and an interruption in the nutritive processes. Diarrhœa rapidly reduces the firmness of the muscles, and if the drain be severe, in two or three days there is a marked loss of flesh and strength. The eyes are sunken, the features pinched and livid; the pulse rapid, feeble, and nearly imperceptible; and the extremities cold and shrunken. On the other hand, after the cessation of an acute attack, the lost flesh and vigor are quickly regained, and the child soon recovers his wonted color and spirits.

In the first place, an attempt should be made to correct diarrhœa, even in its mild form, by the removal of its cause. In the majority of cases we believe this will be found in the diet. Farinaceous food, which should not as a rule be given until after the teeth have appeared, is a common cause of intestinal irritation.

Should a substitute for maternal milk be necessary, the best is cow's milk with the addition of sugar-of-milk as recommended. Limewater in some cases may be added in the proportion of a tablespoonful to a feeding bottle which holds about six ounces. In addition to its nutritive value, limewater tends to keep the milk

sweet. The temperature of food is also very important; it should be given cold, or even iced in feverish states. Cold milk and limewater will often suffice to arrest an attack when warm would be wholly useless. When nausea at the stomach is superadded to the diarrhœa, and is troublesome, all preparations of milk may have to be suspended for a few hours, and whey, veal-broth, water, or barley water substituted; and this, again, followed by beef-tea, or other kinds of animal broth. The application of a broad flannel bandage to the abdomen, particularly during dentition, is very serviceable, and expedites a cure. It should extend from the waist over the hips. In those children disposed to diarrhœa this should be worn constantly. The feet and abdomen should be kept warm. Cleanliness and fresh air aid recovery. Except in severe cases, children should be taken out of doors for short intervals, properly protected from atmospheric changes.

The remedies needed may be many, but the chief ones only, and their indications, are here given. Chamomilla, diarrhœa during dentition, or from cold, with fretfulness or restlessness; colicky pains; greenish, watery, frothy and offensive evacuations; yellowness of the whites of the eyes, and sallow skin. Ipecacuanha, for simple diarrhœa, from overloading the stomach, or during hot weather with sickness to the stomach, the latter symptoms being more marked than the diarrhœa. Mercurius, when the stools are green, whitish, clay-colored, watery, or mixed with mucus; straining, nausea, and thirst. Podophyllum, for profuse, sudden,

fœtid, exhausting discharges, worse in the morning and forenoon; frequent retching without vomiting; drowsiness; rolling and perspiration of the head; moaning and restlessness; diarrhœa better at night.

Other remedies may be needed. Consult also other forms of diarrhœa, as well as the various forms of stomach troubles, and the chapters on foods. Never neglect a diarrhœa, especially in spring or summer.

ENTERO-COLITIS—SUMMER COMPLAINT.

This is a serious and often fatal disease. It may set in after an attack of cholera infantum or the commencement may be so insidious that serious derangement is overlooked until the loss of flesh and strength are so far advanced as to force a conviction that some secret disease has been undermining the system. In this insidious form, fever is absent from the first; the evacuations may be three or four daily, about the color and consistence of putty, and accompanied with pain and straining. The dejections consist partly of undigested food; and when there is violent straining, mucus, and even blood from small vessels ruptured by the severity of the straining. The motions often smell sour and offensive, while the child looks dull and pale, but otherwise well. This form of diarrhœa may continue for weeks, or even months; the additional symptoms being loss of flesh, color, and activity. At length more decided symptoms set in; the stools becoming watery, slimy, clay-colored, or grass-green, having an increasingly offensive odor. At this stage variations

are almost constant, often coincident with atmospheric changes. The emaciation advances; the food, eagerly taken, seems to pass through the child immediately in an undigested state; the child lies listless and helpless, or cries plaintively, and draws up his legs from the accumulation of gas in the abdomen.

The skin is now dry and feverish, the features old and pinched, the bones projecting, and the child appears a mere skeleton, loosely covered with flaccid skin. The appetite becomes capricious, or is altogether absent; the stools become excessively frequent—fifteen or twenty in the twenty-four hours; thrush, soreness of the buttocks, and death may shortly supervene.

From the poverty and thinness of the blood, the feet, fingers, and eyelids may swell; or effusions may take place in the lungs. Eruptive fevers are very liable to occur, or convulsions or stupor may precede dissolution. Should the stools, however, become more solid, and colored with bile; should the patient also assume a more active, fretful, and tearful temperament, hopes of recovery may be entertained. Diminished fœtor of the stools, constipation following the relaxation and increase of flesh and strength, are additional grounds for anticipating a favorable termination of the disease.

This form of trouble is generally traceable to bad hygienic conditions, atmospheric influences, and improperly treated diarrhœa or cholera infantum

The younger the child, the more easily is it impressed by neglect of cleanliness, want of proper food, fresh

air, and sunlight; and the more essential to recovery is its removal from the influences of these causes. The reprehensible practice of giving newly-born infants castor oil and boluses of sugar and butter by ignorant and old-fashioned nurses, is also a frequent cause of diarrhœa, vomiting, and indigestion. Chilling of the surface of the body is another frequent cause of entero-colitis. As this cause may be obviated, we would impress upon all mothers the necessity of protecting their children, especially if at all delicate, from the inclemencies of the weather.

The acute disorders to which this form of diarrhœa is a common sequel are cholera infantum, measles, small-pox, scarlatina, inflammation of the lungs, enteric fever, croup, bronchitis, and pleurisy. Inflammation of the large bowel, when the motions assume a dysenteric form, ulceration of the mucus membrane of the small intestines, and tubercular peritonitis, are rare causes.

If the disease date from a few days of the child's birth, or if its commencement coincide with weaning or the use of unsuitable food, it is probably a simple intestinal catarrh. In this species of entero-colitis the temperature is lower than in health. When derangement follows an acute disease, there is generally fever, pain in the abdomen, languor, and frequently vomiting. These symptoms slowly subside, and leave the case one of entero-colitis, such as we have already described.

Tubercular inflammation of the mesentery—marasmus—is one of the most formidable causes, and may always

be suspected when, without the irritation of dentition, there is a persistent elevation of temperature in the evening. When the diarrhœa shows traces of blood, and the abdomen is very tender to pressure, ulceration of the mucous membrane of the intestine is probably present.

The graver forms are those following inflammatory diseases, or when the stools are greenish matter, like chopped spinach, or brown, fetid, dirty fluid and mixed with purulent mucus and blood. Dry and rough tongue, thrush, or dropsy are very unfavorable symptoms. Great tenderness of the abdomen on pressure is also of serious import. On the other hand, if the motions become thicker and more uniform (homogenous), even though they continue very offensive, a favorable result may be anticipated. Amongst the additional favorable signs may be included—continuance of the natural progress of dentition, the appearance of tears, and the occurrence of any eruption (unconnected, of course, with any of the exanthemata) upon the child's body, even althongh the diarrhœa may not at the time have undergone any visible improvement.

The remedies that have cured cases of this disease are many. A careful selection of the similar remedy should be made, and a dose given every two hours.

Arsenicum for bluish or white tongue; excessive unquenchable thirst; vomiting; distension of, and pain in the abdomen; diarrhœa worse after food, especially after midnight; motions watery, slimy, black, green,

whitish, or bloody, and frequent and scanty; weakness and emaciation; distressing restlessness, sleeplessness; pale face; coldness of the extremities.

Belladonna for high fever, hot head, flushed face, worse on lying down, starting in sleep.

Calcarea carbonica for diarrhœa in weakly, pale-faced, emaciated, scrofulous children, who are liable to glandular swellings on taking the least cold; undigested, sour, papescent, frothy, fetid, or involuntary stools; threadworms; pains during a motion, and faintness afterwards.

Carbo vegetabilis for offensive diarrhœa; thirst after a motion; much flatulence, acidity, and ill-humor.

Cina for diarrhœa associated with worms, starting and crying out in sleep, and other worm symptoms.

China for diarrhœa, worse after eating; yellow, watery, undigested, blackish, or putrid motions; flatulence; loss of appetite; debility.

Croton tiglium for thin, yellowish-brown, putrid evacuations, expelled suddenly, and induced by eating; involuntary stool during sleep.

Iodium for thin, fetid evacuations, with distension of the bowels; emaciation from unassimilated food; hectic symptoms. It is especially suited to the diarrhœa of strumous children.

Mercurius iodatus for chronic diarrhœa, with hardness and enlargement of the abdomen; the glands may sometimes be felt on pressing the hand upon the bowels, which impart a knotty feeling. This remedy is most suitable for the stunted and ill-nourished chil-

dren of weakly parents, particularly when scrofulous enlargements or abscesses exist.

Mercurius solubilis for frequent evacuations of frothy mucus, or whitish, green, offensive, or bloody stools; excoriation of the anus; violent pain; jaundice.

If there is severe straining, with other dysenteric symptoms, Merc. cor. is preferable.

Phosphorus for chronic diarrhœa in children having a consumptive tendency; yellow tinge of the eyes and skin; great prostration; chest complications. Tall children.

Consult also Diarrhœa, Cholera Infantum, Indigestion. The food becomes the chief point of attention. Consult Various Foods, p. 109.

In the case of infants, milk and water, without sugar, is the best of all food; but where it does not agree Horlick's may be tried. In some few cases animal broths are efficacious. In older children, old rice, freshly cooked in milk, is excellent. Mutton, chicken, game, pigeon, white fish, etc., are generally advantageous if not overdone. Raw eggs beaten up, or eggs lightly boiled, and other nutritious kinds of food, are necessary. Raw meat often answers well; a piece of lean mutton, minced and pounded to a pulp, with all pieces of fibre removed, and mixed with bread crumbs and a little salt. Of this from one to three ounces, according to the age of the child, may be given daily. This dish is particularly valuable when the diarrhœa has caused much wasting and exhaustion, and when the evacuations contain unaltered food. Tepid

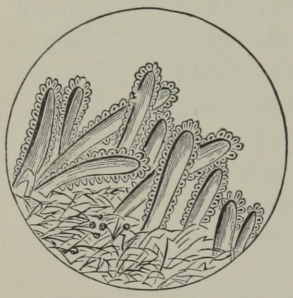
abdominal compresses, and frictions over the spine and whole body, are also necessary. An abdominal belt of flannel is often efficacious. Rubbing the body with oil once or twice a day is a valuable method of feeding these cases. As suggested, children should be protected against atmospheric changes by warm clothing. Lastly, change of air is often necessary and promptly curative. If no other end be served, it may remove the little patient out of the range of some undetected and unthought of cause of the disease, which exists in the air or water.

CHOLERA INFANTUM—GASTRO-ENTERITIS.

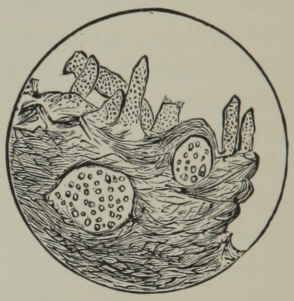
This is a disease of rare occurrence but one easily recognized. It is ushered in with profuse diarrhœa, followed by vomiting and rapid prostration. It usually occurs in early summer, and is due to heat and errors in diet. Cases may occur at any time of the year.

The child may have a slight diarrhœa, or be ailing for a few days, and suddenly the diarrhœa becomes very much worse, the discharges very thin, watery and offensive. It is languid, nervous and anxious. Now vomiting makes its appearance; all that is taken being ejected as soon as swallowed. The vomiting and purging may be simultaneous, and the child is deathly sick. All this cannot have taken place without being evident by great prostration. The appearance of the mouth is hot, dry and inflamed. The inexperienced may think that the whole trouble is due to teething. But these

are serious symptoms that must be promptly arrested, or the whole surface of the entire bowel will be stripped



Healthy villi.



Villi stripped and torn off in cholera.

of its covering and severe inflammation follow. Get the best physician at once, as this is a disease that needs a skillful pilot. But in the meantime much may be done to ease the severity of the attack.

The first thing to do is to suspend food, and give only sips of water and the most bland articles of drink. To feed such a child is but to aggravate the trouble. If the child is nursing it should be given the breast only about once in three hours. If it is fed put it at once on the most infantile form of food. If milk is vomited in curds, try cream, or arrow-root food, or only a solution of sugar of milk (a teaspoonful to a gill of water) may agree. An older child may be given beef-tea in small quantities. Sometimes milk well diluted with water is the only thing that will stay down. Usually cold food agrees better than warm.

The remedies needed are those for indigestion, prostration, and inflammation, combined. A pill of Cam-

phor, or one or two drops on a lump of sugar, may arrest the whole trouble.

Arsenicum is usually the first remedy, it being indicated for a profuse, thin, offensive, watery diarrhœa, vomiting of everything taken but sips of water. This should be given, every hour a dose, until the symptoms abate in severity, then less often.

Veratrum should be given if in addition to the above symptoms there is drawing up of the legs, cold sweat on the forehead, and coldness of the abdomen. The child is evidently going into a state of collapse. This remedy may be repeated every half hour until improvement sets in, then less often.

When a reaction sets in there may be fever, flushed face, and starting. Now Belladonna should be given.

When the attack is under control Arsenicum may be given at long intervals for a few days if the thirst continues. If there is neither thirst nor appetite China should be given, especially if there is much wind in the stomach or bowels. Feed the child sparingly or the diarrhœa may continue and run the child into genuine summer complaint. Try Bovinine.

ENTERITIS—INFLAMMATION OF BOWELS.

This is a disease of rare occurrence: it is ushered in with a chill, followed by dry, hot skin, quick, wiry, strong pulse, thirst, nausea, or vomiting, and often constipation. The child complains of severe pain in the abdomen, especially around the navel, which is aggra-

vated by pressure. It lies on its back, with its knees drawn up. Diarrhœa is also a frequent symptom.

The causes are: Cold, errors in diet, purgatives, worms, internal strangulation of the bowels, some general disturbance, as fever.

It will rarely be improper to commence the treatment with a few doses of Aconite. If the disease has arisen from cold, and be encountered early, this medicine will most likely rapidly restore the patient's health.

Arsenicum may be needed if there is severe burning pains around the navel, obstinate vomiting, and much prostration. Often indicated.

Belladonna should be given for sharp cutting pains coming in paroxyms, causing the child to shriek and cry out sharp.

Colocynth for drum-like distention of the abdomen, severe gripings, bilious vomiting; when the large intestines and rectum are affected.

Kali bichrom. for thickly-coated, brown tongue, bitter taste, pale stools when the upper part of the intestines are affected.

Mercurius cor. for hard, distended, and tender abdomen; fœtid, watery stools; constant urging to stool, followed by straining and evacuations of mucus or mucus and blood

Podophyllum for diarrhœa, with stools constantly changing in appearance; morning exacerbation; tendency to jaundice.

Hot fomentations should be applied to the abdomen,

followed by a carefully applied tepid wet compress. Ice or cold water may be taken freely in small quantities. The diet should consist of milk and water only. As the disease subsides beef tea or Bovinine, Fluid Food may be given.

CHOLERA MORBUS.

This disease is manifest by severe vomiting and diarrhœa, and prostration. Usually there is severe griping, pain, but sometimes it is absent. The attack is usually due to indigestion from eating some green articles. It is however more than indigestion, for there is evidently poisoning of the system by some acid. Cherry stones contain deadly Prussic acid; currants and apples, Malic acid; corn, Fusil oil, etc. It differs from cholera infantum, in that it occurs in older children, and is precipitated by cold rather than heat. There is usually a history something like this:

At dinner the child ate freely of boiled green corn, and at night had some cherries or currants, or it ate freely of green apples; perhaps also drank freely of ice water; or the system was chilled by a sudden change in the weather, digestion was arrested, and the attack was ushered in during sleep. It is of frequent occurrence during the first cold spells of early summer season.

The first thing to be done is to aid the system to get rid of this foreign matter by giving freely of warm drinks in which is a drop of Spirits of Camphor. Noth-

ing sour should be given for that will increase the prostration.

Narcotics like Opium should never be given even with extreme caution. Cases have occurred where a drop too much has produced fatal prostration.

Better give stimulants. The best is hot water, with or without the Camphor. This, with Opium and Pepper, are favorite remedies with the Old School.

Arsenicum is the chief Homœopathic remedy. It arrests fermentation, and allays the irritation of the mucous membrane. If the nausea and vomiting is still persistent Ipecac may be given. If great prostration, even to collapse, Veratrum. If cramps in the limbs, Cuprum. For the prostration that results Arsenicum will be still needed, especially if there is much thirst. If there is no appetite nor thirst, China should be given. Beef-tea in small quantities is the best food, and toast water the best drink, or bits of ice in the mouth. It is really similar to a mild case of cholera, and should be treated accordingly. Quiet should especially be insisted on. (See page 190.)

DYSENTERY—BLOODY FLUX.

Dysentery is manifest by severe pain before stool, straining during stool, which appear slimy, and sometimes bloody. This disease is especially severe in children, and occurs from cold—a chill, for example—and is sometimes a sequale of diarrhœa, indigestion or cholera morbus. It differs from entero-colitis in that it is sudden in its onset and the motions are very small

after the first few times. At first there is not much pain and less fever, but as the disease continues the pain and fever both increase. As the child is not able to control the desire to strain it sometimes becomes almost continuous. The mucous membrane of the lower bowel is severely inflamed, and the treatment must be prompt and efficient.

The child should be put to bed with a hot compress to the bowels and something warm to the feet. A cold or warm compress to the rectum is often a great relief. The chief remedy is Mercurius cor. when there is pain before and much straining with the movement, which consists of mucus or blood. Relief from pain except when the bowels must move again. When the attack is ushered in with a high fever Aconite will sometimes control the whole trouble. Colocynth is the remedy when the pain is severe and colicy and the stools bloody. If the passages are small clots of white mucus, worse in the morning, Kali bich. is the remedy. If there is burning on passing water Cantharis should be given. A common expedient is to give an injection of cooked starch containing a few drops of Laudanum. If the right remedy has been selected this will be unnecessary. It may check the bowels too suddenly and throw the child into a high fever, delirum, etc. To antidote this Belladonna or Coffee should be given. The evidence of improvement in dysentery is that the bowels move less frequently, or there is less pain, mucus and blood. When slight improvement is manifest continue the remedy, and quiet and encourage the child. The

best food is boiled milk, milk porridge or milk toast. Toast water is a good drink, or bits of ice.

CONSTIPATION.

Constipation in infants is almost invariably due to improper feeding, particularly the too early use of starchy kinds of food, which may occasion great mischief; irregularities of diet in the mother of the suckling infant; purgatives, etc. It is also sometimes due to fissure or stricture of the rectum. It may also be a symptom attendant on fever, disease of the liver or brain, etc., and will then disappear with the derangement on which it depends, without special treatment. If there is fever do not expect the bowels to move.

Headache, feverishness, restlessness, distention of the abdomen, frequent but inefficient urging to relieve the bowel, or the inclination may be altogether absent, disturbed sleep, are the chief symptoms. Vomiting is occasionally a symptom of obstinate constipation.

A tablespoonful of sweet oil is preferable to castor oil so often given. Injections are best when little fluids are taken: Bryonia, Nux vomica and Sulphur, are the medicines which are most useful in constipation. In all cases it is well to commence with Sulphur. A dose night and morning of the medicine will usually be sufficient

Bryonia will be needed if the large motions pass with difficulty; irritability; headache; brown tongue.

Lycopodium is especially useful when there is much flatulence in the lower bowel; red sand in the urine.

Mercurius sol. for sallow skin, the white of the eyes being yellowish; profuse secretion of saliva; pale, whitish motions.

Nux vomica for frequent ineffectual urging, restless sleep, irritability.

Opium for torpid bowels; hard and lumpy motions; headache, drowsiness, dizziness; retention of urine.

Plumbum for obstinate cases; dark motions, consisting of small balls.

Podophyllum for pale or clay-colored evacuations, mottled with green; constipation following diarrhœa; prolapsus ani; sallow skin; restless sleep.

Sulphur for painful distention of the abdomen; habitual costiveness.

The diet should be regulated; infants should not be allowed starchy kinds of food, or too much cow's milk; older children should not have cheese, or too large an allowance of meat; fresh vegetables—cabbages, turnips, onions,—ripe fruit, oatmeal porridge with syrup, and brown bread may be taken freely. Entire wheat flour gems answers admirably in some cases. A draught of water, especially on rising and retiring, is also advisable. Frictions with the warm hand or with olive oil over the back and abdomen are often effectual in affording relief, and are applicable equally to infants and older children. In obstinate constipation, or if worms are present, injections of tepid water, or soap and water are generally serviceable. Children should early be habituated to solicit the action of the bowels every morning with regularity. Purgatives are to be strictly avoided.

PROLAPSUS ANI—FALLING OF THE BOWEL.

This is a protrusion of the mucous lining of the rectum through the anal crifice, after the action of the bowel, which goes back of itself, or is easily replaced.

The chief causes are long-continued constipation or diarrhœa; purgatives; straining excited by the irritation of worms, or of stone in the bladder; laxity and delicacy of constitution. Although not confined to them, it is most frequent in children.

Arsenicum when there are hot, loose motions preceded by colicky pains and thirst.

Calcarea in chronic cases in scrofulous children.

Lycopodium for inflamed rectum, much flatulence in lower bowel.

Mercurius cor. for much tenesmus, with blood in stools.

Podophyllum for prolapsus of the rectum; loose motions, of a brownish hue, hot, and having an acrid odor.

When prolapsus occurs after the action of the bowel, the protrusion should be reduced by placing the child across the lap, and making pressure on the protruded part with the fingers, previously lubricated, and carried beyond the contracting ring of the muscle around the anus. Prolapsus occasioned by straining from thread worms is usually corrected by the treatment for worms. Bathing the parts with cold water every morning, and injections of water are useful. The child should lie down for a short time after the action of the bowels.

Constipation should be prevented by the measures elsewhere prescribed. The diet should be wholesome and unstimulating.

RECTAL FISSURE, STRICTURE, AND ULCER.

Frequently what is supposed to be simple constipation is due to fissure, stricture, or ulcer of the rectum.

Slight fissure of the rectum will cause a burning itching that is often mistaken for worms. When the child's bowels move it is in great pain. If the fissure or crack is deep the child will cry and almost go into spasms when its bowels move, and there will sometimes be blood upon the stool. As the rectum is pulled open a deep red crack will be seen.

Ulcer of the rectum is usually due to a neglected fissure. The torn surface becomes widely separated and nature tries to repair the wound by a healthy inflammation. This may appear like a split pea sunk in the folds of the rectum. This is intensely sore and causes great distress when the bowels move.

Stricture of the rectum is a spasm due either to a neglected fissure or ulcer. Spasm is usually present with both, fissure or ulcer.

When a child gets red in the face, cries, and dreads a movement, which is either bloody or covered with mucous, the rectum should be carefully examined.

In either case the bowels should be moved by injections and the raw surface kept covered with some oily material; Petroleum is the best, mutton tallow will do. The child's food should be made extra oily, either

with cream or Sweet oil. Sulphur is the remedy needed. If the child is feverish, with hot head, Belladonna will relieve. The child in the group (upper left hand) was thus cured.

WORMS.

The worms that most commonly infest children are of three varieties, the pin worm (Oxyuris vermicularis); the round worm (Ascaris lumbricoides); and the tape worm (Tæia solium, or Tænia lata). The first two are most common, the tape worm being very rare in children under three years of age, although the author took twenty-nine feet from a child a year old. Pin worms are from half to three-quarters of an inch in length, white and thread-like, moving rapidly. They inhabit the rectum chiefly and cause great irritation. The round worm is from six to fifteen inches long, similar to the common angle worm, but of a paler color. It lives generally in the small intestines, but is sometimes passed upwards into the stomach and expelled by vomiting, or downwards, and ejected with the evacuations. The tape worm is white, flat, and jointed, varying in length from a few feet to several yards. It generally exists alone.

The symptoms of worms are not very definite. Many a case of gastric catarrh has been dosed for worms.

Pin worms give rise to itching and irritation about the anus, especially troublesome in the evening; depraved or irregular appetite, offensive breath, picking at the nose, puffiness of the face, straining at stool, falling of the bowel, pruritis vulva, disturbed sleep

and general restlessness. They are most troublesome about the decline of the moon. Examine the rectum.

When round worms exist in large numbers, there may be in addition to the above symptoms, pain and swelling of the abdomen; slimy stools; tenesmus; chronic diarrhœa, most troublesome at night, with thin, scanty and offensive motions; pallid countenance, dilated pupils, grinding of the teeth in sleep, convulsions, chorea, etc.

The symptoms of tape worm are less marked; sensations of weight or gnawing in the abdomen; enlargement about the navel; great appetite, and progressive emaciation. Worms are frequently not suspected until seen in the evacuations.

The predisposing cause of worms is an unhealthy condition of the intestines of infants and young children from improper feeding. When the conditions are favorable for the development of worms, their germs or eggs, conveyed into the system by drinking impure water, by eating imperfectly washed vegetables, or underdone meat, find a nest in which to grow and multiply.

Where pin worms exist, Cina will usually be found an effective medicine, especially if there is boring at the nose; livid semi-circles under the eyes; tossing about or suddenly crying out in sleep; nausea and vomiting; griping; itching at the anus; white, thick urine; epilepsy, convulsions, or other nervous disorders.

Mercurius sol. 6 for the long round worm if there is whitish, greenish, pappy, or bloody evacuations, with

tenesmus; distention of the abdomen; fœtid breath; great flow of saliva; restlessness at night.

Sulphur, worm colic; constipation; and to complete the cure.

Urtica urens, excessive itching of the anus, especially at night, from pin worms.

For tape worm, an emulsion of pumpkin seeds followed by oil, is the best agent the author has used for tape worms. Male Fern oil is also one of the most useful and reliable remedies in tape worm.

When there is much irritation an injection of salt and water (a teaspoonful to half a pint) may be used at bed-time for several days. Or limewater injections may be used, or a little sweet oil. The application of lard to the anus every night for eight or ten days tends to free the child from pin worms. The diet should include well cooked animal food, beef, mutton, fowl, white-fish, and a liberal quantity of salt as a condiment. Cakes, pastry, potatoes, butter, veal, and pork should be withheld. The hygienic means for improving the constitution of the child recommended under the various diseases of the digestive organs should also be adopted. The directions for the dietary of children at different ages will generally suffice to prevent the various troubles enumerated here. (See Fissure.)

CHAPTER V.

THE ABSORBENT SYSTEM AND ITS DISEASES.

This system is a peculiar one, and I hope to give a clear idea of what it is and its office.

The surface of the bowels are covered with fine projections called villi, in the centre of which is a canal that leads to a gland. The chyle passes right through these villi, enter this canal through this gland and on the other side along a tube that leads to the blood-vessels. The glands of the bowels empty into a canal that passes up and empties into the veins on the left side of the neck.

There is another division of this wonderful absorbent system. Along the bloodvessels even in the brain these absorbent canals are found and along their course are glands. These are small at the extremities but larger at the bends of the knees and elbows, and larger still at the groin and under the arms (axilla) and at the angle of the lower jaw. When they are enlarged from any cause they are called "kernels" by the people.

This system of tubes and glands it will be seen takes up the food in the bowels and picks up the extra lymph in the tissues. It gathers up the fragments that nothing be lost. Its activity in the general system will depend upon the surplus material poured out into the tissues, and in the bowels its activity depends largely

upon the fat in the food. Much of the watery portion of the food it will be remembered was absorbed by the bloodvessels.

The development of this system in the child will depend much upon the constitution of the mother and her method of living. If her blood is rich in fat and her diet contains much fat liquids, this system will be well developed. It is well developed in the alkaline child. In the acid child it is feebly developed; the tubes in its system being few, and the glands small and scanty. An acid child is imperfectly developed in this most important particular.

The healthy activity of this glandular system will depend much upon the fluid that it picks up. If it is dirty water, like a strainer it will get clogged up, and as a result the glands swell, as they did in the case referred to on page 166. These glands enlarge from many causes, *e. g.*, foul air, bad food, dampness, too much liquid food, alkaline dust and indolence. The causes of lack of development are: Dry regions, dry food, activity of both mother and child.

The food needed to develop this system we have just seen. When we have a child that is acid and has this system poorly developed so that nutrition and growth are interfered with, then the mother should study carefully what is said in Chapter V. Fat and water aid its development and these should be freely given an acid child with a feeble absorbent system. Where the tendency is to too great activity of this system, as manifest, first by grossness, then by swollen glands (kernels)

then the food should be more dry and stimulating. The diseases of this system are kernels, consumption of the bowels, glandular obstruction in the lungs, neck and brain, and enteric fever.

CONSUMPTION OF THE BOWELS.

If the food and water contains much lime, we may expect these glands to get obstructed. The glands of the bowels being most active will be apt to show signs of obstruction by the food not being absorbed, but instead passing off thin, white and yellowish, with little or no smell. Sometimes the first sign is profuse perspiration about the head.

The appetite keeps up, in fact seems to increase with the frequency of the stools. The abdomen becomes tense and swollen, while the limbs are flabby. The child peevish and fretful is wasting away with what physicians term marasmus (tabes mesenterica) or consumption of the bowels. The trouble is that these absorbent glands are obstructed and swollen. Sometimes they may be felt as knots in the bowels but not always.

The first thing to do is to give the bowels a rest if possible. Oil the child all over twice a day with oil of sweet almonds. Cod oil may answer better in some cases.

A bad case of marasmus with hooping cough was thus rescued by the author, and a returning diarrhœa next year cured by oiling. (See How to be Plump,

page 45). His picture is the lower central head of the group.

Give it small quantities of beef tea as warm as the child can take it. If it is nursing the milk should be rendered less fat. Bathing it in warm water in which there is beef tea will be valuable. Beef pulp with sugar and a little salt saved one such case for me where one parent was consumptive and the other cancerous. A trip on salt water or into a dry region will help. Avoid dampness. Emigrant children, used to a dry atmosphere, are particularly liable to this form of bowel trouble crossing the ocean, or when they settle in a damp section. A flannel band should be worn about the bowels.

The chief remedy is Calcarea, which is indicated by sweat on the head, open fontanelles, undigested, sour, frothy, fetid stools; pale-faced, clear skin, flabby children.

In stunted children inclined to sore throat, Mercurius iodatus, as indicated in entero-colitis, may be useful.

Iodine is valuable where the stools are thin, fetid; child emaciated; dark hair and eyes.

Arsenicum is called for when there is great emaciation; debility; restlessness after midnight; wants to drink often small quantities of water.

The Sulphur child wishes to put everything into its mouth; great voracity; stools excoriates the anus; wakes from sleep, screaming, frightened.

This class of cases need the most skillful attention of a competent physician to save them.

GLANDULAR OBSTRUCTION IN THE LUNGS.

These lymphatic glands are numerous in the lungs especially at the junction of the bronchial tubes. Enlargement of these cause difficulty of breathing, cough and if they break as they sometimes do, then there may be hæmorrhage.

When this system is feebly developed there is frequently a dry cough, and miliary tubercles develop from atrophy, shrinking up of these glands. But when they are obstructed, as evidenced by the sweaty head, with the diarrhœa, there may also be a loose, hard cough. The evidence of glandular derangement is very evident.

Breathing foul damp air, is the chief cause of obstruction of these glands in the lungs.

The treatment already given will apply here. If the glands of the bowels are all right so that food is absorbed, then select the food needed by the case. Removal to a better room or air should be the first step.

Calcarea phosphorica is the form of the remedy that is usually indicated.

Cod oil may be given here with advantage. If oil is used externally, do not apply it on the upper part of the body.

GLANDULAR OBSTRUCTION IN THE NECK.

Obstruction of the glands of the neck is of very frequent occurrence in children where the absorbent system is large and is overtaxed by the child's diet or surroundings. The glands at the neck may be only slightly

enlarged, or they may become very much swollen—the so-called scrofula or king's evil of the ancients. This is an evil that is very easily controlled by proper food and treatment. The food should be dry and stimulating. The air should be dry, and the rooms light. The best of all remedies is Calcarea iodium. Calcarea may be given alone, or Iodine, as the case may indicate. Calcarea phosphorus may be needed here if the lungs are also affected, as they sometimes are.

Tubercular meningitis is really a disease of this system, but a description of it is deferred until we speak of diseases of the brain.

ENLARGEMENT OF THE TONSILS.

Sometimes congenital or the result of inflammation of the throat. It causes difficulty of swallowing, talking and interferes with the hearing and the development of the mouth. Belladonna sometimes cures these rapidly. Baryta carbonicum in dwarfed children, and Calcarea iodium in fleshy children are the principal remedies. Injecting these with Iodine or cutting them off are doubtful expedients. These children usually are too alkaline. This tendency should be controlled.

GOITRE.

This is also an enlargement of another kind of a gland of the neck, but is due to the same cause, obstruction by calcareous matter chiefly. In the Magnesian lime stone regions of America and Europe it is often met. Goitre is an enlargement of the ductless thyroid gland at the throat pit.

Tying a ribbon below it quite snugly has interfered with its growth. Bathing it with Iodide of Potassium ointment has caused it to disappear. Spongia 30 has cured more cases than any one remedy. Some think that it is the small quantity of Iodine in the Spongia that does the curing, and they give Iodine instead, but usually with not so good success.

ENTERIC FEVER—TYPHOID FEVER.

This is a disease due to inflammation and ulceration of the glands on the surface of the bowels. In children, enteric fever is often called infantile remittent fever, or bilious remittent fever. Hitherto it has been commonly known as typhoid fever, but the term enteric more correctly describes the nature of the disorder.

The exciting causes are: (1.) Water containing decomposing organic matters, such as that obtained from wells in close proximity to leaky cesspools. (2.) Air containing the gases which have been given off by decomposing organic matters, such as that emitted by water-closets, drains, ditches, and sewers.

The predisposing causes: (1.) Youth. Children are very liable to it, from the fifth to the ninth year of life, and, according to our experience, are often attacked when other members of the family escape. (2.) The season of the year. The disease is always most widely diffused in the autumn and the first setting in of cold weather; it occurs with less frequency in spring and early summer. (3.) The condition of the atmosphere. A long continuance of hot, dry, summer weather gener-

ally promotes the occurrence of the disease; while, on the other hand, during cold and wet in summer and autumn it is much less frequent.

Enteric fever is usually insidious in its invasion, the early symptoms being those of indigestion, languor, poor appetite, constipation, pain in the head, sleeplessness, dull wandering mind, and often delirium at night. The patient complains of much weakness, thirst, and has a dry, red, coated, or cracked tongue. The pulse is quick and feeble, the skin hot, and a bright circumscribed flush appears on the cheek. Enlargement of the abdomen and diarrhœa take place, with tenderness on the right side, below the level of the navel (the right iliac region,) and a gurgling feeling is produced there on pressure; there is also increased dullness over the spleen from its enlargement. The diarrhœic discharges are of a light ochre color, copious, liquid, and in advanced stages of the disease often contain altered blood.

The temperature rises gradually, that in the evening being about 1° higher than in the morning. A considerable and continuous difference between the morning and evening temperature (that in the morning being the lowest) is a favorable indication. Just as during the increase of the disease the temperature gradually rises, so in recovery the decline in the temperature is gradual. A persistent temperature of 104°, or an elevation of the morning over the evening temperature, is unfavorable.

Left to themselves, mild cases are over in twenty-

one days, but severe ones may last four or five weeks, or even much longer.

Enteric fever is sometimes mistaken for other diseases, especially for rapid consumption. Further, it may be mistaken for meningitis (inflammation of the brain,) tubercular peritonitis, and typhus. A careful investigation of each case is necessary in order to form a correct diagnosis.

The great danger is from perforation of the bowels, which is consequent upon the ulcerations before mentioned, and which destroys many patients when recovery seems to be setting in. Hæmorrhage and severe diarrhœa may lead to a fatal issue, from extreme exhaustion. Danger may also arise from lung-complications—pneumonia, bronchitis, or pleurisy; or the fever may subsequently call into activity latent germs of tubercle.

This disease requires skillful treatment. Administered in the early stage, before diarrhœa has set in, Baptisia unquestionably modifies the symptoms, and even cuts short an attack, as it frequently has done for the author. In the absence of complications we prolong its use until convalescence is established. The symptoms for Baptisia are pain in the forehead, flushed face, sleeplessness, slight nocturnal delirium, thirst, thinly white-coated tongue, frequent soft pulse, and heat of skin. When there is profuse diarrhœa Arsenicum will probably be required, especially in a late stage of disease when there is a good deal of purging of

thin feculent matter of a light ochre color, with or without blood.

Bryonia stands next to Baptisia in its relations to the disease; it is indicated by the following symptoms: Headache, flushed face, bitter taste in the mouth, heat of skin, and pains in the limbs.

Muriatic acid may be needed if there is putrid sore throat, great depression.

Other remedies may be needed, *e. g.*, Belladonna when the brain is involved; Carbo veg., offensive and putrid exhalations and excretions; China, debility during convalesence; Ferrum as for China; Hyoscyamus, restlessness, picking at the bedclothes; Mercurius copious perspirations; Phosphorus, pneumonia; Phosphoric acid, debility with much perspiration; Sulphur, in convalescence.

If any troublesome affections arise during convalescence, reference must be made to other parts of this work. We may, however, suggest Iodine, Bryonia, or Phosphorus, for disorders of the chest; Carbo veg., Ignatia, Mercurius or Nux vom., for indigestion; Belladonna, Hyoscyamus, Opium, Zinc or Rhus for disorders of the brain. Deafness usually disappears with the return of strength, which may be promoted by China, Phosphoric acid or Sulphur. China also moderates hunger, and facilitates the repair necessitated by waste of the fluids of the body. Sulphur aids recuperative efforts. The ventilation of the apartment should be a thorough as open doors and windows and a good fire can make it, while the patient should be protected from draught and kept comfortably warm by additional

blankets. Light and sound should be subdued. All unnecessary furniture, and every vessel that is not clean, should be removed. Vessels to receive the excretions should be ready prepared with some disinfectant freely employed, and afterward removed immediately. A second bed or couch, to which the patient could be removed, affords relief and change of air immediately around his body. But the recumbent posture must be maintained, even during early convalescence. Any violent or sudden movement might occasion a relapse. The linen, including blankets, should be frequently changed. The mouth may be often wiped out with a soft towel, wet in water which contains a little Condy's fluid, to remove the sordes which gather there in low forms of fever. Frequent sponging with tepid or cold water, or vinegar and water, drying quickly with a soft towel, is very refreshing and healthful. The body may be sponged piecemeal to avoid fatigue. Washing prevents bedsores; if these form they should be protected by Arnica or Calendula plaster. A sheepskin or deerskin with the hair on, is excellent to prevent bed-sores. In bad cases, where it can be had, a water or air bed may be necessary. In addition to sponging the abdomen, a wet compress is of great utility. It tends to diminish excessive diarrhœa, check the ulceration of the ileum, and avert perforation. During the early course of the fever the wet-pack is invaluable.

At the commencement of the fever, pure water, toast-and-water, gum-water sweetened (one ounce gum Arabic, one-half ounce of loaf sugar, to one pint of

hot water,) soda-water, or lemonade is nearly all that will be required. Cold water lowers the temperature of the body, and aids the medical treatment. On account of the dry and shrivelled state of the tongue, the patient is often unable to relish or swallow any food. To lubricate the mucous membranes and stimulate the salivary glands, a little lemon juice and water may be given a few minutes before the food. Everything taken into the stomach should be fluid or semi-fluid, until convalescence is established. Milk, arrow-root made with milk, blancmange of isinglass, corn-flour, or ground rice, yolk of egg beaten up with hot water, or milk, cold beef tea, and slightly thickened broths, are nutritious. Nourishment should be given with strict regularity, and frequently. During convalescence, food should only be allowed in great moderation, and never to the capacity of the appetite till the tongue is clean and moist, and the pulse and skin normal. Solids given too early have caused relapse. Change of air, when the child is able to walk out should be encouraged, care must be taken that the strength is not exhausted. Perhaps in no disease is it of such vital importance to watch both appetite and strength as in enteric fever as it occurs in children.

The recognition of lymphatic diseases as here given, is something new and very important.

CHAPTER VI.

URINARY ORGANS AND THEIR DISORDERS.

The diseases of the urinary organs in children are chiefly suppression of urine, retention of urine, incontinence, gravel, dysuria, inflammation of the kidney. The food has a great effect upon the urine, and may be responsible for some of the above diseases. The more concentrated the food the more trouble with the urinary organs from obstructive troubles, while catarrhal troubles may arise from too much fluids, as we shall see.

SUPPRESSION OF URINE

is the first disorder of the infant. It ought to pass water during the first six hours. Its bowels usually move first and then it passes urine. If the infant is a very spare, thin, little baby, we may expect trouble from suppression, as it has not much fluid to spare. In such cases there is usually uric acid crystals that block up the urinary tracts in the kidneys.

Sitting the child in a bowl of water as hot as it can bear, so that it comes up to its waist, will help to start the secretion. The use of Aconite is usually all that is needed in the way of a remedy. Apis is a valuable remedy for suppression or retention. The urine will usually be scanty until the milk arrives, on account of the lack of water in the system. This class of children will need to be fed early with diluted cream.

RETENTION OF URINE.

This is of frequent occurrence and is due to an inability to discharge the urine collected in the bladder.

The child is restless, uneasy, and unable to pass water beyond, perhaps, a small quantity, though there is frequent urging; or there is a continual oozing of urine, which smells strongly ammoniacal. The urine may be bloody, or contain mucus or pus. In chronic cases it may result in dilatation of the kidneys, uræmia, and death. In retention of urine the distended bladder may be felt at the bottom of the abdomen, and its enlarged dimensions discovered by feeling. If a catheter be introduced, the bladder is found full. In suppression of urine the bladder is found empty. Death is preceded by drowsiness, coma, and convulsions.

The causes are: Obstruction of the neck of the bladder; by uric acid crystals and mucus; cold; acute fever; fibrinous exudation; injury to the spine; inflammation of the bladder or urethra; holding the urine too long; paralysis of the sphincter vesicæ; stone in the bladder; spasms.

The first remedy is Aconitum, especially for retention from cold, fever, or inflammation. Hot, dry skin, thirst, etc.

Cannabis sativa if there is a slight discharge on urging, of thick mattery urine.

Cantharis for frequent urging, with total suppression; or the discharge, with pain, of a few drops of bloody urine.

Gelsemium for spasmodic retention; the water being passed freely at times.

Hyoscyamus for retention from spasm of the neck of the bladder. Child is very nervous and cries much. This is the first remedy given in the Foundlings' Home.

Nux vomica for constipation, heat in the lower part of the abdomen; in patients of a bilious temperament.

Pulsatilla for the bowels tending to be relaxed, heat in the lower part of abdomen; in patients of a mild temperament and sensitive disposition.

The child should have a warm or hot bath, followed by ample friction, especially along the spine; and only a spare diet. Gum water, barley water, or cold water may be freely taken. The catheter is seldom requisite, unless there be spinal or other organic disease, or the passage blocked up.

ENURESIS—INCONTINENCE OF URINE.

This is a frequent and troublesome affection of children; not a disease in itself, but a symptom dependent upon causes often difficult to detect; it may consist of partial or complete loss of power to retain the urine; from neglected polyuria. The most common form in older children is enuresis nocturna—wetting the bed; in rarer cases the child may have an almost incessant urging to pass water, which, if not responded to, results in a painless, involuntary discharge. If the child be troubled with a cough, the inconvenience is much increased, as during each paroxysm the urine is apt to escape. The affection is most common in children from three or four to fourteen or sixteen years of age, and is most frequent at night.

The chief causes are: Irritation of the bladder from worms; digestive disorders; lymphatic constitution; too large a quantity of warm fluids in the evening; food or drink causing an acid state of the urine, which irritates the mucous coats of the bladder; calculi; tumors; congenital phymosis, etc.

Belladonna is especially useful when the affection is most troublesome at night. The child is feverish and starts in sleep.

Benzoic acid for high-colored and strong-smelling urine. This is one of the best remedies.

Calcarea carbonicum in scrofulous children with worms; head sweats when it sleeps.

Cantharis for reddish urine, passed with heat and pain; feverishness.

Chamomilla for uneasiness in urinating, indigestion, and sourness of breath. Cross and wants to be carried.

Cina if due to pin-worms, or digestive disorders.

Equisetum (scouring rush) when there is incontinence day and night.

Ferrum for inability to hold the urine during the day.

Gelsemium for inability to retain the urine night or day.

Phosphoric acid if there is excessive, pale, watery, alkaline urine.

As incontinence of urine is generally the result of disease, medical and general treatment, which must be entirely regulated by the cause, are necessary to correct the annoyance. All salt, sharp, and sour articles of food, malt-liquors, spirits, tea and coffee, should be avoided. Meat may be eaten in moderate quantities, but only a small quantity of fruit, and no flatulent food. Nothing hot should be taken in the afterpart of the day. Simple water, milk and water, and cocoa are

the most suitable beverages. Cold water or mucilaginous drinks in moderation tend to diminish the acrid properties of the urine. The mother or nurse should be quite certain that the child fully empties its bladder before getting into bed, as a child very tired or sleepy is apt to shirk this. Until the cause is removed, the child should be taken up once or twice in the night to urinate. He should sleep on a hard mattress, with light clothing, and not be permitted to lie on his back; this may be prevented by fixing an empty cotton spool so that on turning on his back the spool may press into the muscles. At bedtime an occasional warm bath at 90° to 98° Fahr., or a warm sitz bath, is often of great value in this disease, and greatly contributes to the success of the general treatment. Sponging the lower part of the back with hot water at bedtime is said to cure some cases of incontinence in children. Patients should take much open air exercise, and have the back or whole body bathed with cold water every morning; the whole process, including drying with a large towel or sheet, should not occupy more than a few minutes.

Corporal punishment will work no cure. The fear of it increases the tendency to urinate in the case of nervous children. It should only be resorted to when incontinence is the result of an indolent habit of neglecting the natural desire.

DYSURIA—PAINFUL URINATION

sometimes trouble children, and is due to inflammation of the urinary passage from cold. This should never

be neglected. The chief symptom is crying before, when, or after urinating; straining and dread. The urine is scanty and may be passed in drops. The child should be well protected from cold, and given warm drinks and liquid food. Aconite is the best remedy where there is present a feverish, nervous restlessness. Mercurius when the urine is very high colored, smells strong and is passed with straining. Lycopodium when the parts become turgid from pressure to urinate. Spirits of Nitre and pumpkin seed tea are common remedies. (See also Retention).

POLYURIA—FREQUENT URINATION.

This is often present where the child takes large quantities of food, especially starchy food. If there is much salt taken we may expect profuse urine. Profuse urine and profuse perspiration are symptoms of a grave condition of the body. They are significant of the phosphate of lime being dissolved out of the bones, giving rise to rickets or hydrocephalus. If the urine can be collected, it will throw down a heavy white sediment.

The food should be changed, perhaps salt added, and the best remedy here is Nux vomica. If the profuse perspiration continues, give Calcarea phos. The digestive organs are usually at fault and they should receive the most attention. Lactated Food gives satisfaction here.

GRAVEL

is not often met in children except in limestone regions, or children that take a large amount of calcareous mat-

ter in their food or milk. Sometimes gravel is hereditary and is often due to sluggish digestion and assimilation. The drink of such children should be boiled water. The milk may need a pinch of soda in it. Magnesia has a good effect upon the water. The best remedy is Arsenicum where sluggish digestion is the cause. Clevers (Goose grass) has a domestic reputation in gravel. For the pain in passing the gravel, Belladonna. For the suppression while the gravel is forming, Apis is a valuable remedy. Following the passage of gravel, there may be retention or dysuria.

GENITAL IRRITATION.

This is a bad habit that children acquire when there is any disorder of longstanding like incontinence, gravel, dysuria, etc., especially the latter. Some children are taught the bad habit of rubbing these parts by older children or nurses. It cannot be continued long without it being discovered by the watchful mother.

In the girl there will be apt to be leucorrhœa or a white discharge. This will arouse suspicion, but whether due to the habit or not, may be determined by further watchfulness. It should be known that this discharge in girls may be due to weakness, spinal irritation, bladder trouble, cold, and irritation by worms as well as by the finger or otherwise.

In boys the organ will show symptoms of handling. Quite frequently the foreskin becomes very much swollen, giving rise to the disease known as phymosis which

sometimes completely closes the end. Usually cold water compresses and Aconite arrests it. The child should be kept quiet. When it becomes very sore a physician should be consulted. Sometimes the child succeeds in pulling the small foreskin over the head of the organ, and is not able to get it back. This is called paraphymosis. The whole end now swells rapidly. Cold water should be applied and the end well oiled should be pressed back with both thumbs. The sooner this is done the better. With a little coolness, almost any one can succeed. The child should be kept quiet and Arnica (one drop of the tincture to a tablespoonful of water) applied locally. Aconite better be given for the fright and fever that may come up.

Watchfulness and regulating the child's diet and general habits will control the temptation to irritate these parts. The best remedy to control this disease is Platina. When the intellect is affected from lack of development and dwarfing of the body, Calc. phos. should be given twice a day. When due to any disease or disorder, that should receive the chief attention. Strict cleanliness will do more to tone up the system and moral sensibilities than anything else. If the habit is persistent, a physician should be consulted. He may discover a remote cause, the removal of which will cure the whole trouble.

Carelessness and neglect here may ruin the child both mentally and physically. Many a case is due to spinal irritation that will follow the poor thing for years, giving rise to premature development and life-long invalidism.

DISEASES OF THE LUNGS AND HEART.

CHAPTER I.

NASAL DISORDERS OF CHILDREN.

The respiratory system is composed of the nasal passages, the throat, the bronchial tubes and the air vesicles in the lungs. The lungs are made up of a spongy mass of vesicles that unite to form the bronchial tubes which unite to form the trachea at the upper part of which are the vocal cords. This part is called the larynx. The space back of the tongue is called the pharynx, although the whole passage is open, still when the soft palate is raised it closes the passages into the nose. The vocal cords are stretched across the canal, and the muscular coat is able to contract, as in croup and asthma, and prevent the air from gaining an entrance. This spasmodic condition extends to the lesser bronchi and the air vesicles and may contract so violently as to shut out air and render suffocation imminent. Lining the whole tract is a mucus coat covered with cells that wave back and forth like the gills of a fish. These prevent all the air from escaping from the lungs. It will be seen that this is a tortuous tract that retards the air from rushing in and warms it on its passage into the air vesicles. The object of this system is to carry pure

air to the blood vessels that pass around all these air vesicles. The blood absorbs oxygen and gives off foul carbonic acid gas. If we did not breathe pure air, the blood would soon be so loaded with carbonic acid as to poison the system. The heart is a force pump that sends the blood through the lungs and all through the body.

The nose stands at the entrance of the respiratory tract, and is made up of two cavities divided by three waving bones which give a great deal of space for the air to enter, and for extensive distribution of the nerves of smell. The larger the nose, the better the smelling function, and as a rule, the better developed are the respiratory organs. The nostrils should be well dilated, if they are not the mother should train her children to keep the mouth shut and to breathe through the nose. If sufficient air does not get into the lungs, the upper portion, and the lesser vesicles will not be dilated sufficiently, and the lung capacity will suffer. The nose is a very important organ and should be well trained and developed.

CORYZA—SNIFFLES—COLD IN THE HEAD.

This is an inflammation of the mucous lining of the nose, attended with a secretion, which is occasionally so profuse as to interfere with breathing and sucking. In infants the disease is usually termed sniffles.

The causes are exposure to draughts and cold, sudden changes of temperature, wet feet, sometimes inherited syphilis (in infants.)

It usually comes on with slight shiverings, pain or a feeling of weight in the head, redness or itching of the eyes, obstruction of one or both nostrils, and a discharge of a thin acrid fluid. These symptoms may be followed by sore throat, mucous discharge, hoarseness, sneezing, dry cough, chilliness, general weakness, more or less fever, quick pulse, and loss of appetite.

In the very early stage Camphor may be administered. To infants it may be given by inhalation, repeated every twenty minutes for three or four times. To older children it may be given on sugar.

The chief remedies are Nux vomica or Kali bich.

Aconitum should be given in the early stage, if there be any febrile symptoms, swelling and redness of the lining membrane of the nostrils.

Arsenicum should be given if there is a watery, excoriating discharge.

Euphrasia if there is also a copious watery discharge from the eyes. Kali bich. is needed when the discharge is very thick and blocks the nostril up.

Mercurius sol. 6, for the profuse "running cold," as also in cases in which the discharge is semi-purulent, this medicine is most efficacious. Syphilitic cases.

Nux vomica is the established remedy for the "stuffy cold," dry at night and fluent in the morning.

Sambucus is indicated if the discharge is thick and yellow.

The child should remain in a room the atmosphere of which is of a comfortable, uniform temperature. A warm bath should be given on going to bed, and the

child well wrapped in an extra blanket, so as to favor the free action of the skin; this is still further promoted by drinking freely of cold water during and after a bath. In the case of infants their noses should be frequently smeared with simple cerate, cold cream, or tallow, to prevent the discharge from forming into hard crusts. In chronic obstinate cases consult a physician.

If suckling be difficult or impossible, the milk should be drawn, and the infant fed with it by means of a spoon until the complaint is modified.

Except before the third month, and for decidedly delicate children, rapid cold bathing of the whole body is a grand method of preventing children from being chilled by exposure to cold air, which is otherwise beneficial. For delicate children, tepid water may be used at first, and gradually reduced to cold, and the bathing done very quickly. Children should be exposed to the open air daily, which tends to strengthen the body to resist atmospheric changes. Children should be properly clothed, especially the lower limbs and abdomen. Lastly, infants should be taught to use the nostrils for breathing in sleep instead of the mouth. This cannot be done too early, for the habit is difficult of acquirement if neglected until adult life.

CHRONIC NASAL CATARRH.

This is sometimes an obstinate disease, especially in decidedly alkaline children, and is often dependent upon the condition of the digestive organs. No description is necessary.

The remedies in addition to those already enumerated are Calcarea carb. and Hydrastis. These with Kali bich. have cured the most of the cases for the author. A physician better be consulted in these cases.

HAY FEVER—AUTUMNAL CATARRH.

This peculiar disease sometimes attacks children. It is ushered in about the middle of August like an ordinary coryza; sneezing, profuse running from the nose and eyes, and feverish symptoms. The disease runs six weeks or more, and may remain confined to the nose or may invade the lungs, producing marked asthmatic symptoms.

This disease is due to the susceptibility to the marked change of the atmosphere at that time, and to the irritating presence of dust,spores, etc.

The remedies that have been of service to the author, who has treated scores of these cases are Arum 30, Arsenicum 30, Nux, Ipecac and Sulphur. The first two have cut short the disease in the first stage. The next two in the second stage. Ipecac is especially valuable in the asthmatic form. Sulphur to wind up the case. Arsenicum iodium 200 has proved a valuable prophylactic.

The child should be kept out of the air and should be made as comfortable as possible, cold water to the nose in the pure catarrhal cases, and hot in the asthmatic ones prove of service. (For further directions see the author's large work.)

EPISTAXIS—BLEEDING FROM THE NOSE.

This is generally a trifling ailment in children enjoying fair health, and requires no treatment, ceasing spontaneously in a few minutes. When, however, it occurs in delicate children, when it recurs frequently, or when due to injury, treatment may be necessary. Giddiness, weight or oppression in the forehead may precede the bleeding. In some cases the blood passes backward into the stomach, when it may, without careful investigation, be mistaken for hæmorrhage from the lungs or stomach. The causes are injuries; congestion of the head from coughing, passion, etc.; thinness of the blood; weakness of the lining membrane of the nose, etc.

Aconitum, if from excitement or passion. Arnica, if from a blow or other injury. Belladonna, if preceded by a throbbing headache, redness of the face and brightness of the eyes due to excitement. China, if weakness results from loss of blood in delicate children. Hamamelis, blood oozing slowly drop by drop and continues dark. Millefolium, red blood flowing without apparent cause. Phosphorus, bleeding from the nose when there are bruise-like marks (ecchymosis) on the body. The application of cold water, ice, or a cold iron to the forehead, neck, or back; holding the arms above the head for a few minutes, or pressing with the extended finger horizontally across the cheek bone just above the bleeding nostril. These means will rarely prove insufficient; but should they do so a piece of lint may

be rolled into the shape of the nostril, saturated with Hamamelis and twisted rather tightly into the bleeding nostril or nostrils, first removing any clots of blood there may be present. This treatment is recommended not only on account of the styptic qualities of the remedy but also for the mechanical support of the tightly fitting plug. The child should be placed in a recumbent posture in a cool room.

FOREIGN BODIES AND GROWTHS IN THE NOSE.

These may be articles put in, or growths. Children are very apt to put leaves, stones, etc., in the nose. These are usually easily extracted by a hair pin if caution is used in inserting it. A pinch of snuff in the other nostril sometimes forces out the foreign body by the severe sneezing. Soft bodies may be extracted by long forceps. Growths in the nose may be extracted by short bullet forceps, snipping off a piece at a time. The remedy for growths is Calcarea phos. The symptoms calling for it are, plugging of the nostril with mucus, bleeding from the least touch of the growth, and dropping of mucus into the throat.

BORING IN THE NOSE.

This is a symptom of stomach derangement. The acid eructations causing irritation of the nasal mucous membrane. The remedy for it is Cina. Arum also has boring at the nose until it bleeds. Correct the stomach trouble and this symptom will disappear.

CHAPTER II.

DISEASES OF THE THROAT.

Every child should be taught to open its mouth wide so as to bring the whole back part (pharynx) into view. The size and shape of the tongue should be carefully noted; the wings of the soft palate, the tonsils, and back part of the throat, should be points of observation. This wall of the throat is always very red, and the tonsils also. Every mother should know just how a healthy throat ought to look, then she can the more readily detect disease or quiet her fears. If she causes the child to gag with the finger the whole throat is suddenly brought into view. Babies' throats can be examined in this way. Whether the tonsils are enlarged or not may be ascertained by feeling on the outside.

PHARYNGITIS—SIMPLE SORE THROAT.

In this form of inflammation the throat is unaccompanied by quinsy or ulceration. Throat is red at first, sometimes studded over with white or yellow spots, little or no swelling, pain on swallowing, fever. The chief cause is exposure to cold. Aconite should be given at once, a dose every two hours. If it does not act favorably in a few hours Belladonna will probably be called for and is the chief remedy needed, especially when the attack has come on suddenly. Aconitum

should be given when there is dryness, roughness, and heat in the throat, with a choking sensation, hoarseness, fever. Belladonna, for bright red throat feeling as if scraped raw, with pain on swallowing. Dulcamara, if from getting wet, or from damp foggy air. Mercurius sol., for sensation as of a lump in the throat, worse at night, increased flow of saliva, white or yellow spots on throat. Frequent sips of cold water, steaming the throat, and compress to the throat, are ready and reliable helps.

TONSILLITIS—QUINSY.

Quinsy is an inflammation in which there is great swelling of the tonsils, severe throbbing pain, hoarseness, difficult swallowing and expectoration, headache, pain in the back and limbs, foul tongue, offensive breath, shivering, and general febrile symptoms terminating in resolution or suppuration or chronic enlargement. The predisposing causes are: scrofulous constitution, Mercury, and disorders of the digestive organs. The exciting are: atmospheric changes, and wet feet.

If seen very early the patient should have a few doses of Belladonna. If suppuration be inevitable Hepar sulpur should be administered. Chlorate of Potash is sometimes efficient in checking the progress of the disease.

The remedies may be indicated as follows:

Aconitum, for pricking sensation in the throat, with much fever. Belladonna, for redness and rawness of the throat, flushed face, glistening of the eyes, head-

ache. Baryta carb., if given early in acute cases it is often very efficacious; is very useful also in chronic cases. Calc. carb., for chronic cases in scrofulous persons. Hepar sulphur, when suppuration has taken place. Guaiacum, in cases accompanied with pains of rheumatic or neuralgic character. Mercurius iod., for considerable swelling, copious salivation, swelling of tongue, fœtid breath. For chronic enlargement of the tonsils Baryta carb. is most valuable. Lachesis is also valuable in tedious cases. In the early stages a cold water compress to the outside of the throat and frequent sipping of cold water or sucking small pieces of ice, suppuration being inevitable a hot linseed poultice should replace the compress and steaming the throat should be had recourse to. Thickened milk is the only food to be given.

DIPHTHERIA.

This disease is ushered in with aching all over, particularly in the back; fever and sore throat. The tongue is broad and red with a brown coat. There is much saliva in the mouth and the tonsils appear swollen and very red. As the disease advances the fever increases and the soreness of the throat is more marked. The tonsils become covered with a whitish false membrane — differing from common sore throat, which may have points of mucus here and there on the tonsils. The severity of diphtheria may be judged by the fever. The higher the fever the more extensive as a rule the exudation in the throat. The disease is

therefore most severe in the nervo-sanguine, where fever is more marked than in the other temperaments. Sometimes the exudation is confined to only one tonsil, and again it goes from one to the other. In these cases the odor from the breath is not great. These are usually mild cases and are under control in twenty-four hours and well in a few days.

Sometimes the disease is more malignant, being ushered in with a very high fever with chills, and sometimes with convulsions. The prostration is great from the first, and the whole back part of the throat is rapidly covered with a dirty white wash-leather membrane, and the odor from the breath is very offensive. The swelling of the tonsils is very great, so that the throat is almost closed. In such cases it may be necessary to tie a cloth on a piece of whalebone and pass down past the tonsils so as to clear a passage for air or food. The fetor from the throat increases, the nose becomes invaded, the membrane assumes a darker color, and a bloody fluid may run from the nose and mouth. In such cases swallowing is very difficult—sometimes almost impossible—and the child sinks away in a stupor; or, the passages to the lungs become affected and the respiration is hoarse and whistling and suffocation closes the scene, unless the medicines arrest the poisoning process; when recovery is slow and convalescence prolonged. Such cases are apt to recover with loss of muscular power of certain parts of the body, as the vocal muscles, an arm, a leg, etc. These regain their tone in time under proper management.

In other cases of diphtheria, the throat symptoms may be slight, but the disease soon attacks the vocal organs. The voice is husky, and a hoarse cough comes on, growing more and more croupy, and we have genuine diphtheritic croup to manage.

In the treatment of this disease the first remedy needed usually is Belladonna (12 pills in a third of a glass of water) for the fever, headache, stupor and the red swollen throat, a dose every hour or two. The child should be put to bed and kept quiet until well. About the throat may be bound a compress of cold water or a piece of salt pork. Water may be given freely or beef tea. If there is much mucus in the throat and the membrane begins to form, and the aching all over is marked and worse towards evening, Merc. bin. 3 is the remedy (a small powder in half a glass of water). It may follow Belladonna or be given with it in severe cases, a dose every hour. The more prompt the treatment the first six hours, the shorter will be the attack as a rule. If the throat is dry instead of filled with mucus, and the membrane white, and the child worse towards morning, and especially if the nose becomes involved, Kali bich. is the remedy, and may be given alone or with Belladonna. Here the common Chlorate of Potash lozenges work well. If only one side of the throat is affected and covered with membrane, then neither of these remedies should be given. If the *right* side is first affected, give Lycopodium; while if the *left* side is first attacked, give Lachesis. In bad cases when the fœtor of the breath

gets bad and the throat almost closed up, it may be swabbed out with Permanganate of Potash (as directed for Gangrene of the Mouth, p. 224). If the disease increases in spite of Belladonna and Mercurius, and the whole throat becomes covered with membrane, Merc. cyanide 18 should be given, and the strength kept up by injections of beef tea. The air should be filled with steam and the spray of Permanganate of Potash, especially if it assumes a croupous form. If neither of these remedies have any effect after six hours faithful trial, then give Muriatic acid, which is indicated by a putrid state of the throat; dry parched tongue; great weakness, so that it slips down off the pillow and the bowels are relaxed. Fumigations with Sulphur may be resorted to, as sometimes beneficial in these bad cases. All that is required is to sprinkle a small quantity of Sulphur on a red hot shovel, the room being closed. If it seems to strangle the child, give it fresh air at once.

If the larynx becomes involved and the child gets hoarse and croupy, then this should receive the chief attention. Even here Aconite and Kali bich. have rescued cases for the author and many others. (Consult Membranous Croup).

For the paralysis that remains, Gelsemium or Causticum usually cures. The child should be removed to a more salubrious atmosphere.

From the first the air of the room should be the best. The room should be well ventilated and the whole house put in the best sanitary condition. The author

prefers not to use any local applications in the throat, for the fright and struggle it occasions does harm and then the disease is a general one, and not local only. Control the fever and the disease is abridged usually. A cold pack is sometimes valuable at the onset of the disease. The strength should be kept up by strict quiet, and stimulating food, beef tea, milk, egg, etc. Cup custard can be swallowed when nothing else can be got down. During convalescence great care should be taken to support the strength and to keep the child quiet. Sudden and fatal paralysis of the heart has occurred from running about too soon, even in mild cases. For sudden prostration, Camphor is the best stimulant and Bovinine the best food.

When one case has occurred in a house, others may be expected, and the first symptoms should receive the most prompt attention. Children should be especially watched during a sudden cold spell following mild weather either in winter or summer.

If possible, a skillful physician should be summoned at the very onset. The first six or twelve hours often decides the case.

THE CROUPS: SPASMODIC AND MEMBRANOUS.

Of all the diseases to which children are liable, croup is the one most dreaded by the inexperienced. Every one, and especially every mother should know that there are five or six different diseases with a croupal cough, *e. g.*, acute laryngitis, spasmodic laryngitis, pseudo-membranous laryngitis, diphtheritic laryngitis and

croupous pneumonia. The first is a very rare disease, and seldom met in children, while the second, third and last, are more common. The one that most frequently attacks children is the spasmodic form — the one most alarming but least dangerous, while the one least alarming at the onset is the most dangerous. The author has for years taken special pains to instruct mothers to readily and clearly distinguish between spasmodic and membranous croup.

I will give a brief outline of the chief difference between these *two forms of croup*. It might be remarked here that many works treating of children's diseases, even some professional works, are far from being clear on these subjects. Where the different kinds of croup are treated separately farther on, the various forms of each are carefully pointed out and the treatment adapted to each, are given so carefully and simply that no mistake need be made.

One suggestion I wish to offer here. Croup, in any of its forms, is not so dangerous as to give no time for thought. It is one of the most dreaded diseases and for that reason many mothers lose their self-control in its presence.

SPASMODIC CROUP.

In spasmodic croup the child may have a little fever in the evening or perhaps none at all, and awake about midnight with a distressing ringing, suffocative croupal cough. In great alarm a messenger is dispatched for a physician, while the frightened parents administer

emetics, wrap the neck in hot or cold water, and when the physician arrives, the spasm is relieved and the child sound asleep again, with only a slight croupal cough. The same scene may be repeated the next two nights, but in a less degree. These attacks sound very alarming, but are really not very dangerous unless greatly prolonged. A compress of cold water or hot, or both alternately, will usually relieve the spasm of the larynx in a few moments.

The first remedy, if these applications do not at once relieve, is Aconite, which is indicated for the nervous anxious restlessness, as well as the spasm. It should be given every few minutes. If there is no fever and a severe spasm, and a harsh, croupal ring to both inspiration and expiration, give Spongia. If there is a loose, rattling cough, give Hepar sulphur for several days, a few doses.

When emetics are given, especially Syrup of Ipecac, inflammation of the lungs (catarrhal pneumonia) is apt to follow. Bryonia is the best antidote. If a loose cough continues give Hepar sulph. and keep the child from taking cold. Emetics render the lungs sensitive.

MEMBRANOUS CROUP.

This, the really dangerous form of croup, begins as a slight cold affecting the head and throat. The cough is not frequent, but gradually grows hoarse towards evening. The second day the child coughs more, and although it is loose it still retains the croupal sound. Towards evening there may be some fever and more

cough. The next morning the cough is as hoarse as it was the night before, and it increases in frequency and severity towards night. Now there may be fever and difficult breathing, as well as a distressing harsh, hoarse, croupal bark. The inflammation in the throat has gradually increased, and a tough membrane is forming on the inside of the wind-pipe slowly but surely, narrowing the opening for air, and strangling the child. Two days ago this disease would have been easily arrested, now it will be difficult. The disease lasts from five to ten days or even longer.

For the loose cough at first, Hepar sulphur should be given. For the fever at night, Aconite, especially if there is nervous anxious restlessness. As the cough becomes more dry and shrill, Kali bich. These two latter remedies have cured many cases for the author. This disease yields slowly to treatment, so if there is a slight improvement in twelve hours the remedies should be continued. If spasmodic fits of suffocation occur at night, give Spongia. If the disease continues to get worse after the fourth day, in a light haired blue-eyed child with suffocative croup, gasping for breath, give Bromine. If dark haired, for similar symptoms, Iodine works better. Bryonia and Ipecac sometimes arrest the disease when all hope has been abandoned. When the cough gets loose, then return to Hepar sulphur. The air should be kept moist, and a compress may be put about the neck, but great care should be used for fear of interfering with breathing. It is observed that emetics in this form of croup rarely do any good,

and are often weakening. The child's strength should be kept up as in diphtheria. Properly managed this disease is rarely fatal.

ACUTE LARYNGITIS—HOARSENESS.

A simple hoarseness and sore throat, usually without any cough, except sometimes a tickling hack that may be very persistent towards night. It is due to an inflammation about the vocal cords. The remedy for this is Belladonna. If there is a fever, anxious restlessness, Aconite will be the medicine. A wet bandage or a flannel about the neck may cure alone. A stocking wrapped about the neck on going to bed is a time honored remedy. This sort of trouble should not be neglected, for General Washington died of this disease or bad treatment—or both combined.

LARYNGISMUS STRIDULOUS—SPASM OF THE GLOTTIS.

This is a form of spasm of the throat that comes from wet feet or cold, as well as from water on the brain. It comes on suddenly at any time of day, and is a very prolonged spasm. There is no cough and in that it differs from spasmodic croup. The child struggles and strangles. This spasm is on inspiration. Cuprum is the remedy. Inhalations of Ammonia (hartshorn) or Chloroform will relieve. For the fever that follows, Aconite may be needed unless there is a rush of blood to the head, and brain complications, then Belladonna is indicated. (See Diseases of the Brain.)

THE VOICE AND ITS MANAGEMENT.

The child learns to talk and use the muscles of articulation slowly and consecutively. First it can only say "ah," "ma," "pa," throat sounds, then "mama," throat and lip sounds, as the mouth expands the tongue is used more and more until words with *s*, *t*, *d*, are accurately pronounced. The child should be trained by the mother to speak plainly and distinctly. "Baby talk" so cunning should be forgotten as soon as possible. All the drill of speakers and singers is to secure clear, distinct and rapid enunciation of the various and wonderful tones of the human voice. This drill not only develops the vocal organs, but the chest capacity as well, and prevents the whining nasal voice so peculiarly American. A full, round voice in a boy or man is very desirable, as well as a sweet, clear musical voice in a girl or woman. Usually what the voice lacks in distinctness and volume is made up in pitched and forced—scream. Special care should be given with boys' voices about the time when they are changing, when the vocal muscles are lengthening. Slow, distinct speech should be especially insisted on. The mother should take great pains in developing fine, distinct voices in her children. They imitate the voices they hear constantly.

"Her *voice* was ever soft,
Gentle and low; an excellent thing in woman."

CHAPTER III.

DISEASES OF THE CHEST.

BRONCHITIS—COLD ON THE CHEST.

Cold on the chest is an inflammation of the mucous lining of the bronchi—the air-tubes of the lungs. It begins usually with feverishness, headache, cough, and when old enough, the child may complain of tightness across the chest. It may only be a loose cough with little or no fever except at night, and is readily cured by Hepar sulphur, or disappears of itself in a few days.

If the attack is severe (capillary bronchitis) the breathing becomes oppressed and hurried with wheezing or whistling sounds. The cough is severe and dry at first, then loose, the mucus frothy and sticky, finally becomes thick and yellow. The tongue is coated white and the appetite fails. The face flushes with the cough and there may be headache. Infants nurse with difficulty on account of the distressing cough. Cases in winter may rapidly assume a very serious aspect. The cough is very suffocative, the breathing rattling and rapid, the face becomes bluish, the extremities cold, and the child covered with a cold, clammy sweat. There may be great drowsiness and wide dilatation of the nostrils. Convulsions may set in and close the scene. In favorable cases the symptoms subside on the fourth day and the child recovers. If the disease is ushered in with fever give Aconite. If the cough is dry then give

Bryonia, but if loose and does not yield to Hepar in twelve hours, change to Kali bich. When it is wheezing and there is much rattle in the chest, give Tartar emetic. This has cured many cases. Then when the cough is not so loose but more dry, and threatens to hang on (after ten days) give Phosphorus. It is valuable in threatened relapses. Applications to the chest of poultices or hot water or oil, the author has found unnecessary. The diet should be supporting, *e. g.*, beef-tea, egg drink, milk, etc. Cold water should be allowed freely. During recovery from a severe attack, exposures should be guarded against. Attacks of cold on the chest often accompany attacks of gastric catarrh. Alkaline children are predisposed to this disease. Emetics should not be given as they are apt to induce

PNEUMONIA—INFLAMMATION OF THE LUNGS.

Inflammation of the lungs are of two varieties in children. One (catarrhal pneumonia) begins like a cold in the chest just described, and the inflammation extends until the whole lung is involved, and the true nature of the case is not suspected, until the suppressed cry and evident sharp pain on motion, leads to the conclusion that lungs and pleura are involved. This may take a week or ten days, then the whole lung must be cleared of this filled-in mucus, so that the whole attack may last nearly a month. If the disease is not recognized, the trouble may be supposed to be bronchitis, pleurisy and inflammation of the lungs. I recall several cases where this mistake was made, even by

college professors. In bronchitis there is usually little or no fever, the child being more cold, while here the fever keeps pace with the inflammation. Aconite should be held to while the fever lasts. Bryonia may be needed when the cough gets dry. If the cough gets loose, Hepar. If there is much prostration, Arsenicum. If the loose cough causes gagging, Ipecac. If the appetite is very much diminished and only small quantities of diluted milk or beef tea can be taken, more will cause distress. Do not try to stuff such a case. During convalescence the child may be very whimsical and brain complications may be feared by the uninformed, and such powerful sedatives as Bromide of Potash and Opium in large doses have been given with disastrous effect. The irritation is intestinal, and not cerebral nor dental, and here no remedy quiets like a few doses of Cina. The appetite returns slowly and convalescence is steady, under proper care.

The other form of pneumonia (croupous) is often mistaken for croup. It is a deep, shrill cough with a croupal ring. There is no spasm nor much fever and only when the child coughs can the true nature of the trouble be detected. There may or may not be pain on coughing. The children attacked are the spare, nervous, acid children, while those having the catarrhal form are usually the alkaline little ones. This will help in making out the case, again, those having the croupous form of inflammation of the lungs, are older children. Here the inflammation is confined to one lobe, and there also may be pleuritic symptoms. Bryonia,

Kali bich. and Phosphorus are the chief remedies. Bryonia is given for the hoarse, dry, croupal cough worse on motion, as nursing, laughing, etc. After a time, two or three days, the cough may become loose at night and dry in the morning then give Kali. If it becomes loose, frothy and persistent with tendency to relapses, give Phosphorus. If the cough becomes loose and catarrhal, give Hepar.

Such children should be protected. No applications should be made to the chest in these cases. One child had to have its ears covered during the winter or the sharp cold winds would produce an attack. The appetite is not good and nourishing food should be given.

Towards adolescence there seems to be cases where these two forms are blended. There the symptoms should govern the treatment.

PLEURISY—INFLAMMATION OF THE PLEURA.

Pleurisy, manifest by sharp pain in the side of the chest on breathing, with fever, is not often met alone in children, but is usually due to progressive inflammation of the lung tissue. From chilling, a child may be taken suddenly with a stitch in the side with suppressed cough and fever. The pain increases until the two surfaces of the pleura, the one next the ribs, and that covering the lungs, are highly inflamed when a fluid is poured out, and the pain is easier. This fluid may be absorbed and the whole disease disappear in a week, or it may increase and bulge out the ribs on that side. The spaces between the ribs will be most pressed out. This is called water on the chest or hydro-thorax.

The remedy for the pain is Bryonia. If there is high fever that is not controlled by Bryonia, then Aconite may also be given. For the effusion (hydro-thorax) Sulphur will be the remedy.

The child should be kept very quiet, and if the pain on breathing is very sharp, a bandage may be put around the chest. A wet compress may be put under it. Hot applications usually afford the most relief. If the collection of fluid becomes very great as it may in sluggish constitutions, it may be drawn off. But with a supporting diet, and Sulphur this is rarely necessary.

TUSSIS—COUGH.

Cough is present in most of the diseases of the chest, but it may also be due to derangement of the stomach, as chronic gastritis when it will be dry and tickling, or to catarrhal inflammation when it will be hoarse and annoying, particularly at night. Cough may be due to ear or tooth irritation, or to brain trouble. In the latter cases it is spasmodic. If due to either of these causes, they should receive the first attention.

Many remedies are indicated for cough. One of the following may be selected for a case with similar symptoms:

Aconitum if there is hard, dry, irritative cough, with fever; after exposure to cold. Antimonium tart. for loose cough, sputa copious, great weakness, vomiting. Bryonia for a dry cough, with pain in chest, yellow phlegm. Cina for a dry or loose cough of a chronic character, when the child is suffering from worms.

Drosera for a spasmodic cough, worse at night; second stage of hooping cough. Hyoscyamus for a dry cough, worse on lying down at night. Ipecac for spasmodic cough with mucus expectoration, and tendency to vomiting. Phosphorus for a hoarse cough, pain under breast-bone, rusty-colored phlegm. Pulsatilla for a loose cough, worse at night. Spongia for a dry, hard, barking cough, hoarseness, burning or tickling in the windpipe. For other remedies see other diseases.

The diet should be light and given in small quantities, particularly if there be fever. A cold sponge bath every morning, and frequent out-door exercise, will often overcome a susceptibility to a cough. A good draught of cold water taken in the morning, and also on retiring, is both preventive and curative of cough. Lastly, children should be instructed to make direct voluntary efforts to restrain the frequency and violence of coughing, for the result of such efforts will be found greatly to mitigate this symptom.

PERTUSSIS—HOOPING COUGH.

This is a violent spasmodic cough interrupted with shrill, crowing inspiration, called a "hoop." It commences as a mild, spasmodic cough, occurring in hurried paroxysms, which grow gradually more severe, so that by the second week the true nature of the disease is manifest. It is most frequently met in children between three and ten years, unless epidemic, when all children even to babies suffer on account of its contagious nature. It often follows epidemics of measles

and small-pox. It is a serious complication of bowel troubles, and when attended with inflammation of the lungs, is apt to be fatal. When the coughing fits occur frequently, blood may escape from the nose, mouth, and even from the ears. The coughing paroxysms terminate frequently with vomiting of food or gagging, ejecting only glary, ropy mucus. The cough is worse at night so that nutrition and sleep are interfered with and the child loses flesh. A decline of the cough at night is a favorable symptom. Cold may prolong or complicate the case.

In the treatment of this disease, Belladonna is the first remedy, unless there is marked fever, then Aconite is to be preferred. When the disease is well established in spite of Belladonna, then the choice will fall on Ipecac if there is constant nausea, loose cough, ending with gagging, paroxysms follow each other in rapid succession. Drosera is to be preferred if the paroxysms of coughing are especialiy violent as if the child would suffocate. Corrallium* is to be preferred if the cough recurs in violent but short spasmodic fits during the day, towards night they increase to half hour attacks. When the paroxysms attended with threatened suffocative vomiting, rattling noise in bronchial tubes, convulsions are symptoms cured by Cuprum. In cases of convulsions not relieved, Ammonium brom. may be given. As the cough subsides Pulsatilla may be needed. This remedy has quite a reputation as a prophylactic. The medicine should be given in water. "In this disease, as in all coughs and colds, it is too much the

*Corrallium 30 and Chelidonium 30 every two hours, alternately have cut short many cases for THE AUTHOR.

custom to give various sweet syrups or medicines in which sugar is used. The sweets presently disorder the stomach, the appetite fails, the strength flags, and the system now enfeebled, has no power to throw off the malady. Whatever may be the nature of the illness, the endeavor should always be made to keep the digestive organs in good order." This advice is especially valuable, coming as it does from an Allopathic author. The food should be stimulating, like beef tea, *e. g.*, milk and articles easily and readily digested. The child should receive the most careful attention during its attacks, and especially after, that it does not take cold, particularly at night. A change of air should be made if only for a short distance.

HICCOUGH—HICCUP.

Hiccough is a sudden spasm of the diaphragm, and is usually present with derangement of the stomach. Sometimes it is so persistent as to be serious. Sips of cold sweetened water will usually control it at once. If it persists, a tea of nutmeg will usually stop it.

CHEST DEVELOPMENT.

Every mother should ensure for her children the best possible chest development. They should be taught to fill the lungs full every morning on rising before dressing. The air should be the best. Forcible expansion twice will not only expand all the air vesicles but rarify the blood, relieve the system of carbonic acid gas and will be a form of lung bath that they will

come to enjoy. Blowing into a respirometer will give zest to this lung practice. Blowing a wind instrument tends to develop rather than weaken the lungs and the

child's first music lesson may be on a trumpet which it should be taught and encouraged to blow. Singing is especially valuable. Laughing tends to forcibly expel the air, and it soon becomes tittering or a loud guffah, unless the training is proper. Nothing sounds so cheerful as a hearty ringing, rippling laugh; and that can be acquired by proper training, and especially by deep inspirations. Many a case of consumption has been arrested by deep inspirations. The chief value of mountain regions for lung troubles is that the rarefied air forces deep breathing. Deep breathing strengthens the mucous membrane of the lungs, so that "colds on the chest" are not easily taken.

CHAPTER IV.

DISEASES OF THE INFANT HEART.

The heart is a strong muscular force-pump, about the size of the fist, that sends the blood through the lungs, and all parts of the body. It also exerts considerable suction force to hasten its return. It has four cavities or four sets of pumps; two work while two rest, so that the sound of the heart over the chest is like that made in pronouncing "lap-duck." Putting the hand on the left side of the breast-bone opposite the nipple, the heart may be felt as it strikes the wall of the chest. Sometimes the heart is on the right side. When enlarged it may be felt lower down. This beat should correspond with the pulse or blood-vessel felt at the wrist. All mothers should know these facts.

PALPITATION.

This is a hurried beating of the heart, and may be caused by excitement, weakness, indigestion, or weakness of the heart. The best time to examine the heart is when the child is sleeping. Fever makes the heart beat faster. If the palpitation is caused by fever Aconite is the remedy; if by indigestion, Nux vomica; if from weakness, China; if from weakness of the heart, if China does not help then give Digitalis. A physician should be consulted in such cases.

ANGINA-PECTORIS.

This is a sharp pain in the chest arresting breathing, and sometimes causing falling. It is sometimes neuralgic, but usually due to spasm of the heart. Gelsemium, Bryonia, or Cactus, are the chief remedies. If it is neuralgic from a feverishness, Gelsemium; if an attendant upon rheumatism, Bryonia; if due to a spasm, Cactus has for me achieved wonders. This chest pain may be the first serious symptom of rheumatism. These cases need the best medical skill obtainable.

CYANOSIS—BLUE DISEASE.

Cyanosis is a peculiar livid, blue or purple condition of the skin due to malformation of the heart. The purple color of the nails, lips and cheeks are quite characteristic. Children suffering from this disease are ill-nourished and frequently rickety. They are easily tired, liable to palpitation, and to pant on slight exertion; the temperature is also below the healthy standard. It is frequently due to malformation of the heart —as non-closure of the foramen ovale, deficient ventricular septum, etc.—which cause imperfect æration of the blood, the venous blood being passed forward with the arterial current. It may however appear as a symptom of croup or cholera, when the flow of blood through the lungs is obstructed; or of partial obstruction of the pulmonary artery, with systemic venous engorgment.

When cyanosis is present at birth, and continues for several months, it is probably due to malformation, and

consequently can only be palliated. All that can then be done is to place the child in the midst of good hygienic surroundings; to clothe it well; and to favor nutrition by providing good food, easy to be digested; also fowls, game, etc. When curable, Digitalis, indicated by palpitation and want of vitality; Belladonna, for congestion; Arsenicum, for collapse, or Veratrum album, for cold hands and feet with cold sweat on the forehead, will be the most suitable remedies. Kali carb may help some of these cases; also Ozone in the room.

RHEUMATISM OF THE HEART.

Rheumatism is supposed not to be a child's disease, but the leg-ache, stiffness and aching that children may complain of are more serious than many mothers will believe. Rheumatism soon attacks the heart in children, and may attack the inside of the heart, giving rise to endo-carditis, or affect the outside covering of the heart, pericarditis. In the former case there is more distress of breathing, while in the latter there is more pain. These symptoms, with pain elsewhere in the body should lead to the conclusion that the case is one of rheumatism. It is here that Bryonia has achieved a wonderful success. Kali iod. (Iodide of Potassium) has also been valuable in these cases, particularly in pericarditis with effusion. Sulphur is also a valuable remedy to aid absoption. The strength should be kept up and the child quiet.

WEAK HEART, AND PROPER TRAINING.

It is easy to understand that, as the heart is a muscular organ, when the rest of the muscles are weak this one must be also; so that weak heart may mean only general muscular debility. The proper training under such circumstances is to keep the heart as quiet as possible, until the muscular system regains its tone. Passive exercise like rubbing, oiling, carriage-riding, etc., will aid the organ, as it recruits the whole system. Long races or sudden starts should be avoided in those children with weak heart.

HEART BURN.

This has no connection with the heart, but is a stomach symptom entirely. It is a symptom of gastritis and should receive its proper attention. It is usually caused by acidity, or highly seasoned food.

VARICOSE VEINS.

Derangements of the circulation are not very often met with in children, except where there is obstruction of the liver; or in cyanosis. The varicose veins may not affect the limbs so much as the rectum, producing what are styled "piles." When the rectum is pulled open the enlarged vein may be seen as a dark blue knot. This may be cut open and the blood let out, or it may burst and leave an "ulcer of the rectum." The remedy is Hamamelis. Nux or Sulphur may be given if there is constipation. Locally, a Hamamelis suppository may be slipped into the rectum at night, or the parts well anointed with oil, or Hamamelis cerate.

THE BRAIN AND NERVOUS SYSTEM.

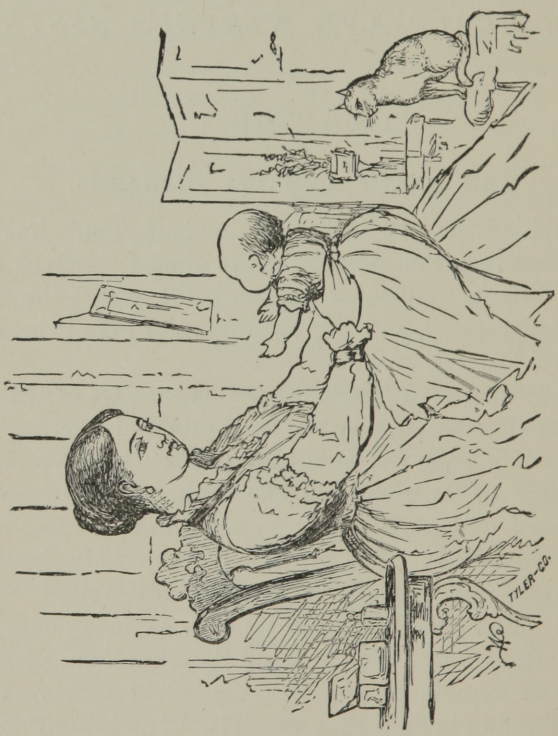
CHAPTER I.

THE BRAIN AND ITS DISEASES.

The head may be "the chief end of man," but we have seen that the stomach is the most important part of the infant. However as the child grows the head develops rapidly, and we are forced to take it into account in judging of a case.

As we have seen (page 28) the upper part of the face indicates the development of the brain and nervous system; while from the side head (see next page and 30) we judge of its growth. The brain expands rapidly backward and particularly forward and upward, until the seventh year. The prominent forehead in the child rapidly learning facts is particularly noticable.

The child does not open its buds as many suppose, *i. e.*, unfold like a flower; but its brain may be compared to a mass of paper that receives whatever impressions and images that reach it. The bias or choice seems to lie in the amount of the mass to be impressed, *i. e.*, front head, top head or back head. Whether we accept the phrenological idea or not, it is a very convenient division of the head for study, and the general facts are quite generally adopted, especially since Fer-



Healthy Head and Face.—Side View.

rier's experiments on the brains of animals. The brains of children harden and seem to come into functional activity from below upward, forward and backward. The impressions on the senses, of feeling, seeing and hearing, it is supposed are conveyed to the brain, and there stamped upon certain cells. These increase in amount so that the brain grows in size and firmness of texture as it is used. Facts acquired, mean then aggregate impressions on nerve cells. Memory is the power to receive and store these facts. To remember is the ability to recall these impressions. Memory, or the necessity to store up useless facts, or to recall the same facts time after time, is a waste of nerve force that no child should be called upon to undergo. One clear vivid impression in detail, made upon a young mind is there for good. Because sensation is most active, the impressions first come through that sense and are the lowest. Then sight, and then hearing gradually come into use. The brain develops from below upward. That is how nature builds a brain, and the effort to call in other parts of the brain prematurely is a positive harm. School well the powers one after another as they come into action, by aiding it to get clear distinct impressions. Action always implies a rush of blood to that part, this must be followed by a rest or a return. Flow and ebb is the order of action and repair. To attempt to call into action a part of the brain feebly developed as yet, means to surcharge it with blood, and this premature or prolonged stimulus is followed by a corresponding depression. Why so

many precocious children turn out so poorly, is because the activity and rest did not go on in proper ratio. Abuse of this law is responsible for many poor diseased brains we meet. Sleep means repose or rest of the brain. As a small part of the infant's brain is used, so it sleeps more. It should sleep most of the time for the first three months, and gradually be more and more wakeful. An adult should have eight hours' sleep, or nine if a brain-worker.

SLEEPLESSNESS.

This then it will be seen is a grave symptom. It may be due to nursing the child too much, too much blood to the brain due to exciting its senses, or it may be due to the irritating presence of food, as we have seen (See Gastric Catarrh.) In the infant the latter cause is the chief one, in older children it may be due to both, as well as strong light, high pillow, etc. A frolic at night is a frequent cause in older children. If due to fright with anxiety and feverishness, Aconite is the remedy. If due to agreeable excitement without fever, Coffea. If the child seems sleepy and cannot seem to drop off, crying out in sleep, hot head, throbbing temples, Belladonna. In older children flow of ideas, indigestion or constipation, Nux. From overeating, indigestible food, Pulsatilla. Opium in the form of soothing syrups, are frequently given these cases, but it is a doubtful and dangerous practice. A drink of water, lowering the head, holding the hands and singing have a soothing effect.

NIGHT TERRORS.

The child starts and cries out frightened, and it is difficult to rouse to recognition. Sometimes it trembles as at the most frightful visions. It is usually due to indigestion, or to dreams of frightful stories. Dreams being, partial, but unconscious thought.

It is best to wake the child, give it a drink of water or a dose of medicine. If due to indigestion, Cina, especially if it has worms. For hideous visions after a fright, Opium. When due to grief, depressed emotions or pin worms, Ignatia. Afraid of the dark, China. Regulate its suppers. The child ought to learn to go to sleep in the dark, and when awake. Most children suffering with gastritis are afraid of the dark.

HEAT IN THE HEAD.

Heat in the head may be due to a variety of causes. It may arise from indigestion or gastritis, from cold, fever, teething, congestion, obstruction of the lymphatic glands in the head, etc. Apply cold cloths to the head unless very hot, warm is better, elevate the head and soothe the child. Fright increases the trouble. If the forehead is hot with throbbing of the temples (more than natural) and starting, give a few doses of Belladonna. If the heat is more confined to the back of the head, and there is a stupid condition, Gelsemium. If a chronic condition, Sulphur.

MENINGITIS—INFLAMMATION OF THE BRAIN

is manifest by great heat, delirium, pain, that causes a shrill, sharp cry, especially during sleep, tossing about, cold hands and feet, sunken abdomen, congested eyes, dread of light, contracted brow, etc. The whole appearance is that of distress.

Inflammation here may be caused by many things; a fall, continued excitement, ear troubles, cold, enlarged glands, etc., or it may be epidemic and appear as cerebro-spinal meningitis. The first two are the most common. If due to a fall or blow, the child may be insensible or not mind it much, and gradually complain more and more of the head, or a cold may cause a fever and then the head becomes affected. Continued excitement like hard study will bring it about in this way. Excitement or study causes a rush of blood to the head, which may increase to congestion, if long continued, and finally inflammation is set up, perhaps by a little cold. A severe cold may cause such a rush of blood to the head, as then to result in inflammation.

The child should be put to bed, the room darkened and kept quiet, very quiet, and a cold compress should be kept on the head which should be high. If due to a fall give Arnica every hour and apply a compress wet in Arnica water. If the child is restless, wants to get out of bed starting in sleep, throbbing temples, flushed face, wild staring eyes, Belladonna, either alone or with Arnica. If the face is pale, the cry a shrill shriek, urine suppressed, give Apis. If due to study, hot

room, child complains of motion or has had rheumatic symptoms, Bryonia is the remedy. If due to a cold or epidemic, Gelsemium is the best remedy, particularly if the back of the head seems most affected. Inflammation is usually followed by effusion of water in this region. This stage is usually manifest by great stupor and dilated pupils. In case of fall now give Hepar with the Arnica, otherwise Hellebore aids absorption; a bad symptom is paralysis, sometimes even then they recover. The nourishment should be beef tea, egg drink, milk. Water should be allowed freely.

TUBERCULAR MENINGITIS—ACUTE HYDROCEPHALUS.

This disease is caused by obstruction from the growth of tubercles in the glands of the arachnoid membrane of the brain.

The symptoms are: Febrile disturbance; quick, irregular pulse; vomiting; constipation, the motions having the appearance of clay; red tongue; and continuous high temperature. The child manifests pain in the head, intolerance of light and noise; has disturbed sleep; grinds his teeth, and is irritable; is unable to stand from vertigo; and becomes generally feeble. He also desires to be quiet; has occasional delirium; looks old and distressed; suddenly cries out; and is very drowsy. Twitching and squinting may also occur. In unfavorable cases coldness of the extremities, clammy perspiration, an exceedingly rapid and feeble pulse, and death supervene.

Aconite followed by Belladonna, and afterwards Bry-

onia are the medicines in most repute in this disease. Aconite for febrile disturbance, especially in the early stage. Arsenicum iod., in the last stage with marked prostration and emaciation. Belladonna for red, hot face; heat of the head; bright or unusually dull eyes; intolerance of light and noise. Bryonia for suspicion of impending effusion in the brain. Helleborus if enlargement of the fontanelles from copious effusion, pulsation being discernable. Hyoscyamus for frequent starting, and picking with the fingers. Zincum for paralysis of the brain; insensibility and involuntary evacuations. During convalescence, Sulphur.

Applications of cold water to the head, liquid diet, sponging the body with cold or tepid water, followed by rapid drying and strict quietude, aid recovery.

HYDROCEPHALUS—WATER ON THE BRAIN.

Some children are born with large heads full of water, but not all large heads are thus affected. Some are composed of solid brains. A large head should have a large body, if the body is small we may suspect water on the brain, especially if the fontanelles are open, and the bones widely separated. This form is called congenital and is the chronic variety.

Acute hydrocephalus follows inflammation of the brain as we have seen, usually tubercular meningitis.

Acquired hydrocephalus arises from an undue amount of blood being sent to the brain, as in wakefulness from prolonged gastritis. The children are usually very wakeful, then become irritable, then pass into the

stupid or apathetic condition of effusion. It sometimes takes years to bring this about, and the child may go off suddenly with convulsions.

The treatment already given for inflammation of the brain and its results may be the best here also. In congenital cases, Calcarea phos. may aid absorption. If one child has been thus affected during subsequent pregnancies, the mother should take Calcarea phos. and Sulphur, alternate days, a dose of each. This will insure better development; much acid fruit should also be avoided. For the acute form, Helleborus and Apis are the chief remedies. In the acquired form the stomach trouble should receive the chief attention. Belladonna will relieve the symptoms of congestion. Bromide of Potassium will be indicated by effusion and convulsions with stupor. This class of cases should be in the hands of a physician, if possible.

HEADACHE.

Headache is due to too much or too little blood in the brain. In the first instance it may be due to cold, indigestion, study, excitement, and in the second to exhaustion or starvation. If due to cold with throbbing temples worse on lying down, Belladonna; if worse on motion, Bryonia; if the head aches across the forehead, worse in the morning or from study, Nux vom. If the right temple aches, with red eyes, Belladonna. If right side, with pale face and exhaustion, China. If from fright or grief, on the left side, Ignatia. Weekly headache, Sulphur. Other remedies may be needed for other causes and conditions.

The hat should be loose. A child with a large head cannot bear a tight hat, and will wear it on the back of the head. Boys' hair should be kept short—and girls' also—until they are in their teens. The scalp should be kept clean. If well brushed the hair will lie smooth without much oil.

SUN-STROKE—HEAT STROKE.

Sun-stroke is a sudden congestion of the brain from the relaxing power of heat. It is manifest by red face, congested eyes, headache, thirst and weakness. Stupor may set in if the case grows worse and the body will become very hot. It is caused by exposure to the sun, and running, warm clothes, high temperature of rooms.

The child should be removed to a cool place, the head bathed with warm water, and made to inhale Camphor. If the face is very red give Belladonna until the congestion subsides. For a resulting nausea, vomiting and diarrhœa or constipation, Bryonia. If the congestion to head and face is very great, with stupor coming on give Glonoine. Sulphur is a valuable remedy for the after effects, especially if there is a tedious convalescence.

For the prostrating effects of the heat, milder than heat-stroke, Bryonia.

Many cases of chronic gastritis are very much aggravated by hot weather, and the cold or acid drinks indulged in. Great thirst should be controlled by Arsenicum.

CHAPTER II.

DERANGEMENTS OF THE NERVOUS SYSTEM.

The nerves are the telegraph wires that carry the messages of sensation and action to and from the brain. The spinal cord is a great bundle of these nerve wires. There are nerves that produce voluntary motion, as when one jerks the finger out of the fire; there are also others that produce involuntary motion, as in the beating of the heart night and day, awake or asleep. These latter are called sympathetic nerves, or those of animal life. They are located inside of the body in front of the spinal column, and are well developed in the plump child. The spinal nerves are composed of nerves of motion and sensation. These are best developed in a thin, spare child. The cerebro-spinal nerves and the sympathetic system are antagonistic, when one is too active the other suffers, and vice versa. With this fact we can understand why a spare child is so nervous and so hard to be quiet, and why a very fleshy child is so stupid. Sensation, we remember is the first wide-awake sense of the infant.

NERVOUSNESS.

This is an excessive activity of the nerves of sensation and of motion. Motion in the infant being confined chiefly to the digestive organs, means spasms or rapid motion of the intestines, and rush of blood, we

can then understand the colic, diarrhœa, wakefulness, and peculiar distress and cry of a nervous child. Such a child will need a peculiar care to control the nervousness. If the mother has been too active or lived on too acid food, this may account for the nervousness of the child. Its red skin should be covered with oil once or twice a day. This will flesh it up as well as help to make it less sensative to touch.

The food should be fatty to affect the bowels in the same way, but not so oily as to cause diarrhœa. This infant should be soothed and not allowed to cry hard. Its clothes should be loose and it will need to be changed often. Riding is particularly soothing to this class of children. They should sleep a great deal. The best remedy for nervousness is Chamomilla. (See also Sleeplessness.) Water should be given these cases freely. Lactated food helps these cases.

CRYING.

This is but a method of expressing pain, fear or nervousness. As we have seen (page 201 and elsewhere) is but a symptom and is always due to some cause which should be removed. (See Gastric Catarrh, Nervousness, Sleeplessness, etc.)

CONVULSIONS—SPASMS—FITS.

Spasms are irregular, sudden and unnatural jerkings of the extremities. When the whole body is thrown into violent contortions it is called a convulsion. A fit is a common name for convulsion. When the muscles

of the jaws are affected it is trismus, and this is what is known by the people as "inward fits."

The cause of spasms is usually irritation of some part of the sensitive child that produces irregular and violent muscular contractions. It is usually peripheral, as from intestinal irritation arising from indigestion, or may be due to fever, etc. Convulsions are usually due to centric causes, *i. e.*, irritation of the brain from congestion or effusion, sometimes they are due to irritation of other parts, as indigestion, an injury, fever, suppressed eruptions, possibly to teething.

The child should be immersed in water up to the neck, and directly afterwards a towel or sponge, squeezed out of cold water, applied to the head; the cold towel or sponge may be applied for about two minutes, but the patient kept in the bath for five or ten minutes. The temperature should be fully maintained, by additions of hot water carefully poured down the side of the bath until the patient is taken out. The bath should be given in front of a good fire, and a warmed blanket be in readiness to wrap the child in directly after it leaves the bath. The hot bath is of great service; it draws the blood from the over-loaded brain to the general surface of the body.

Camphor should be given to inhale, or it may be given a drop in a little hot water, or by wetting the lips with a drop. Belladonna is the most useful medicine, especially if there is red face, brilliant eyes, heat of the head and starting at the least noise, rigidity of the whole body. Veratrum viride for convulsions, fol-

lowing each other rapidly. If that does not relieve, give Kali brom. or Chloroform. Aconite, if caused by fright or excitement, coming on during a nervous or restless fever. Opium for a dark red or purple, swollen, and hot face., turning the eyes upward, with insensibility to light, snoring breathing, suppressed urine, constipation. Ammonia may be given by inhalation to rouse the child from the lethargy following a convulsion. Tartar emetic is usually a better remedy to bring them out of the spasm. If suppressed eruptions, like measles etc., is the cause, give Bryonia, especially if there is cough and difficulty of breathing as from congestion of the lungs. In spasmodic cases twitching of the muscles of the face with redness of one cheek and paleness of the other Chamomilla (both red, Belladonna). Hyoscyamus may be given when there is much starting and twitching in sleep, when awake fretfulness and heaviness of the head. If due to irritation from teething, Gelsemium. Putting salt on the tongue and rubbing it in the palms of the hands are domestic methods of bringing a child out of convulsions. Warm water with salt in may be given to excite vomiting, if the attack is due to some indigestible food. If there is constipation, injection of warm water should be given. The child should not be allowed to sleep heavy, but may be gently roused now aud then. If it is given medicine once in ten, twenty, thirty or sixty minutes that may arouse it enough.

As preventive when there is a tendency to convulsions, as shown by a foul tongue and breath, disordered

evacuations, with screaming, restlessness, etc., the addition of lime-water to the child's milk (a tablespoonful to a feeding-bottle of milk) often acts as a preventive. When a nursing mother becomes overheated, or violently excited, her blood and milk are thereby poisoned. Under such circumstances the milk should be withdrawn, and the brain and blood allowed to cool down before nursing again, or serious or even fatal results may ensue. One or two doses of Aconite if feverish, or Opium, if frightened should be given to the mother. If angry she should take Chamomilla.

EPILEPSY.

This is a sudden and complete loss of consciousness and sensibility with spasmodic contraction of the muscles followed by exhaustion and deep sleep. Sometimes the attack is very slight, being only a slight dizziness, the child is stupefied for a few seconds, the face turns pale, then it resumes its play as if nothing had occurred. This is termed *le petit mal.* It may commence in that way and gradually assume the most grave form (*le grand mal*). The blood suddenly leaves the head, producing a peculiar sensation of faintness, the child is frightened, utters a cry, and falls convulsed and insensible. It then goes into violent spasms, the face becomes turgid, and it falls into a deep sleep, awaking tired, sore and languid, which may last for a few days.

The causes are many, viz: Hereditary tendency; injury of the skull; local irritation, as a splinter or

shot under the skin; tumors; inflammation; parasites in the brain; malformation of, or deposits in the skull. The exciting causes in children are fright, fits of rage, nervous perturbation, hysteria, physical and psychical prostration. Fits are most liable to occur between the second and tenth years, during the period of the second dentition. Other causes are: Gastric disorder, the irritation of worms, repelled eruptions, especially about the head. The disease is more amenable to treatment in children than in adults; but hereditary tendency is always an unfavorable element in a case.

During the attack few medicines have any influence. Smelling of Camphor, Ammonia, or Amyl nitrate may ward off an attack. To prevent their recurrence, Kali brom. has been most successful. Belladonna, Calcarea carb. and Cuprum are the chief curative agents. Belladonna for attacks with redness of the face, sparkling eyes, heat of head, dilated pupils, complete loss of consciousness, foam at the mouth and involuntary action of the bowels or bladder. Body drawn over backward. Calcarea for attacks dependent upon lymphatic obstruction as in too fleshy children. In Cuprum cases the spasms commence in the fingers and toes which are severely flexed, marked flow of saliva. Other remedies may be needed, as Cina for worm symptoms; Chamomilla for irritable, colicky children, one cheek pale, the other red. Nux vomica if preceded by constipation and anger. Ignatia if due to emotions, as grief. Sulphur if due to suppressed eruptions or discharges in alkaline children.

During the attack the patient's tongue should be put back into his mouth, and a cork or linen pad fixed between his molar teeth; he should be laid on a couch or rug, fresh air freely admitted around him, his head slightly raised, and all ligatures relaxed that interfere with circulation and breathing. Throwing cold water on the face does no good; and restraint should not be exercised beyond what is absolutely necessary. In epilepsy preceded by the aura, a firm ligature applied above the part where the sensation is felt is said to prevent the attack. After the fit, the patient should be allowed to pass undisturbed the period of sleep which follows. Hygienic treatment, especially such as the causes of the disease suggest, is of great importance. Under this head we would prominently mention sponging the body, and especially the head, every morning with cold water, quickly followed by rapid and thorough drying. Shower-baths do not usually agree, and bathing in the open sea is obviously dangerous. All violent emotions, excesses of every kind, and especially the precocious development or the unnatural excitation of the sexual instinct, must be strictly interdicted or prevented. Regular out-of-door exercise is beneficial, but it should never be carried too far, as fatigue often excites an attack. Epileptic patients require much rest and frequent change; boys and girls should not on any account sit at lessons for three or four consecutive hours. Studies and open-air recreations should be pleasantly blended. Should fright, disappointment, anxiety, or other mental influences tend to keep up

the disease, a thorough change is necessary, including change of residence, companions, and habits. The diet should be nourishing and taken regularly, in moderate quantities, including animal food once or twice a day. As the appetite is often voracious, it should be judiciously controlled, as such cases may be due to gastric catarrh.

PARALYSIS.

Paralysis is a loss of motion and may affect one side of the face, an arm, or a leg, or the whole of one side, or sometimes both limbs. It may result from convulsions or the child may awake paralyzed especially during teething. It may result from a chill, as in sitting on a cold stone, damp grass, etc., or from pressure of a tumor or enlarged gland.

The treatment should be local and general. If there is high fever, give Aconite, but if there is a stupid fever, give Gelsemium. If due to indigestion or constipation, and the paralysis is of the lower limbs, Nux. If it comes on gradually from long sickness, like diarrhœa, Phosphorus, especially if the child is good natured all the time. If the child is irritable and the left side is affected, Causticum. If due to getting chilled and there are rheumatic symptoms, Rhus. If due to pressure of enlarged glands, Calcarea. (See Diseases of the Absorbent System). The local treatment should be directed to keep up the tone of the muscles, *e. g.*, electricity, baths and rubbing with oil. Every effort must be made to raise the tone of the whole system by fresh air, out-of-door exercise, salt-

water baths, etc. When there is much debility, Cod liver or sweet oil applied locally is often of signal benefit. Friction and passive motion two or three times a day are also valuable accessories. In obstinate cases, local galvanism to the affected muscles will sometimes effect a cure. The daily application of faradisation for weeks or even months may be necessary. If the disease has been neglected for several years, fatty degeneration may have taken place, in which case electricity is inadmissible, then some sort of a mechanical support to be selected by a physician will be necessary. (See Form and its Deformities.)

CHOREA—ST. VITUS'S DANCE.

Chorea is characterized by involuntary, convulsive, muscular movements and ludicrous gesticulations, involving the face and limbs. The twitching movements of the hands and arms, gradually extending to the muscles of the head, neck, and trunk. In some cases the patient can neither stand nor walk, and can with difficulty lie in bed. One side or both sides of the body may be affected. Stammering and stuttering are local manifestations of chorea. The causes are fright, irritation from dentition, or worms, onanism, deranged uterine functions, anæmia, hysteria, or descent from nervous, hysterical women, and disease of the nerve-centres or involuntary imitation, rheumatism, etc.

Causticum is the principal remedy. Aconitum if from fright or cold, especially if fever symptoms accompany the spasmodic movements. Cimicifuga if traceable to rheumatism. Cina in cases due to thread-

worms. Ferrum if there is considerable anæmia. Ignatia if from depressing emotions, fear, etc.; in hysterical persons.

A change of air, as well as of the general surroundings of the patient, is frequently of great advantage. Rest in bed for several days is often advisable; it secures a uniform temperature, and repose for the muscular and nervous systems; at the same time it reduces the wear-and-tear of the system to a minimum. Stimulating applications to the spine, as hot water, etc., are beneficial. The diet should be plain, sufficient and taken regularly.

HOW TO DEVELOP SELF-CONTROL.

Every child, like every colt, needs training; in other words its nervous system, as well as all parts of its body, needs to develop self-control. The child cannot control itself and therefore needs to be controlled until it can manage itself. The effort should be in the direction of helping it to control itself. Self will when it means self-indulgence fills our jails and asylums. Quiet firmness and an early appeal to reason will soon enable a child however nervous to get master of itself. A thin acid child will be hard to control until it gets fleshy, happy and yielding. Diversion is a "flank movement" by which we can compass a stubborn will. Many an infant is fed when it should be amused, and spanked for temper when it is suffering from indigestion. The child should early know that self-denial is the secret of health, as well as of happiness.

CHAPTER III.

DISEASES OF THE EYES AND EARS.

The eye is one of the most wonderful organs of the body. It is a regular photographic apparatus and is made up of several parts;as the anterior chamber, filled with fluid. The iris and pupil with the lens behind it, divides this anterior from the posterior chamber. The fluid in the first chamber is watery, while that in the second is jelly-like. On the back wall of the globe is a screen-like membrane called the retina, which retains the image, and the sensitive vibrating nerves behind convey all the images to the brain, where they are stored up to be reproduced at will. The eye is the window of the soul, it is also a point of observation to the condition of the circulation in the brain. If the back part of the eye is injected and turgid from blood, we may expect the brain to be in the same condition. If pale, we may expect to find an anæmic condition of the brain. If the eye looks tired, the nervous system is also tired. When the eye gets brilliant, the brain needs rest or diversion, when it gets dull the body needs food and the brain sleep. Bright light congests both eye and brain. Children should not work by a bright or flickering light, while a dim light is ruinous. Children should retire with the chickens. Stooping the head as in studying, congests the eye, while reading on the back is a most injurious strain. Babys' brains have little blood, and

their eyes can endure but little light. The eye is one of the most valuable organs in the body, and should be guarded by watchful care.

OPHTHALMIA NEONATORUM—BABY'S SORE EYES.

A few days after birth when the skin and mucous membrane are undergoing their change, the eye often becomes very much swollen. Sometimes it commences next day, and in such cases it is apt to be severe. First there is a little watering, then it becomes thick, yellow pus (matter.) When the eye is open by force, it looks like beef steak. The child is restless, feverish, and begins to grow thin. Sometimes it is caused by the discharges but it is usually due to exposing the eye to strong light to see their color. (It should be known that all baby's eyes are blue at first.) Cold, lack of cleanliness, irritation of soap, spirits, bad air, imperfect nourishment and weakness from many causes, *e. g.*, acid and premature infants. The common treatment is the application of tea to the eye, or of Nitrate of Silver (one grain to one ounce of water.) If there is a feverish, nervous restlessness, Aconite should be given. In slight attacks where there is great dread of light and swollen lids, Belladonna. When the discharge is profuse and yellow, Mercurius. The remedies should be given every two hours. The wash should be applied frequently, for it is essential to observe great cleanliness. The eyes being gently sponged or syringed out many times a day, and the edges of the lids slightly smeared with Olive oil, or cold cream by means of a

camel's hair pencil, before the infant goes to sleep. It is important never to bathe the inflamed eyes with cold water, but always with tepid water. Warm fomentations and sponging are highly beneficial. The child should be kept in an airy, warm, but not in a too brightly lighted room, until the inflammation is cured. If the discharge continues a long time (give Sulphur,) the eyes may be impaired or even lost. With sore eyes we are apt to have sore mouth, (See Thrush,) and digestive disorders. Consult an oculist if possible.

OPHTHALMIA—INFLAMMATION IN OLDER CHILDREN.

Inflammation of the eye is of frequent occurrence in children. The exciting causes are cold, draughts, damp, winds, strong light, heat, smoke, dust, over-study, contagion, etc., while the predisposing causes are sensativeness of the mucous membrane, either nervous or due to obstruction of the lymphatic system. It is then called scrofulous ophthalmia, a not very definite nor scientific term.

The symptoms are: Itching or soreness in the lids; sensation as of sand under the lids; redness of the eyes, with swelling of the vessels; itching and pricking or shooting pains; pustules and scales on the lids; the pains increase in the evening, and on exposure to cold, and there is agglutination in the morning. In some cases little ulcers form on the white of the eye, and then there is great intolerance to light, child cannot open its eyes, and there is a profuse flow of tears.

In the early stage if there is high fever a few doses of

Aconite followed by Belladonna will often arrest the progress of the disease. If due to inflammation from external injuries, Arnica. Arsenicum for burning in the eyes; obstinate cases after the failure of other remedies. Belladonna has pain, redness, and swelling; throbbing in the temples; flushed cheeks, glistening eyes, and intolerance of light. Calcarea carb. when with the eye symptoms there are swollen glands in the neck and other marks of the scrofulous constitution. Euphrasia for profuse discharge of tears in addition to the other symptoms. Hepar sulphur after the acute symptoms have yielded to the remedies prescribed above; chronic cases with agglutination of the lids at night. Mercurius cor. for copious discharge from the eyes with much pain. Extreme intolerance of light, small pustules on the eye under the lid. Sulphur for frequent relapses in lymphatic, scrofulous, children. It may follow other remedies after the more urgent symptoms have subsided. The local treatment will be the same, as in the forgoing disease.

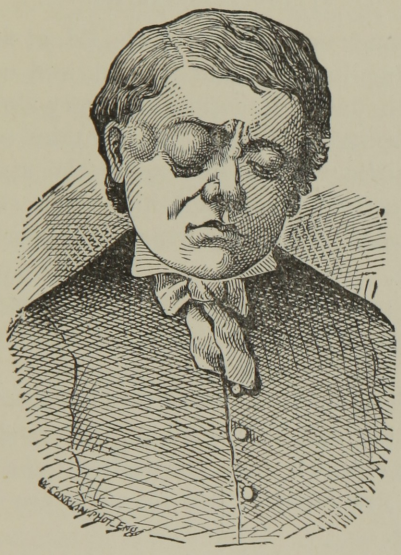
WEAK EYES—WINKING.

May result from bad use of the eyes or from repeated attacks of inflammation. Cases of chronic gastritis, and especially gastric catarrh are often troubled with weak eyes and near sight.

These cases often need glasses early. Sometimes only one eye is affected, but usually both. If the eye sight is short do not select a glass too strong, for that will tend to weaken the eye. Rather give the eye a

rest, strengthen the system, and train the eye by looking at distant objects.

Winking rapidly is a symptom of gastric catarrh and finds its remedy in either Tartar emetic or Stramonium.



TUMORS OF THE EYE.

Growths in the eye are not of very frequent occurrence. Oculists of large practice only meet with a very few cases. It is an almost universal rule that these cases are only brought for surgical treatment when the chances for recovery are very slight indeed. As soon as the eye begins to "bulge" out, or to cause deep seated pain, it should be examined by one skilled in diseases of

the eye. Mothers should make up their minds that it is better to have such a diseased eye removed at once, rather than to jeopardize the child's life by delay. Delays are always dangerous.

STYE — BLEPHARITIS.

A small tumor on the edge of the lid, at first itching then becoming inflamed and painful, and occasionally attended with fever; it suppurates very slowly and is due to atmospheric changes or some taint of constitution. Pulsatilla will often remove the stye if given sufficiently early. Hepar sulphur when suppuration has commenced. Sulphur during convalescence, and as a preventive.

Bathe the parts with tepid water three or four times a day. In severe cases, and when suppuration is going on, a warm-water compress will be useful.

Blepharitis is an inflammation of the margin of the lids. They are red, thickened, and covered with yellowish crusts which mat the lashes together, when these crusts are removed, the lid edges are found raw and bleeding.

Treatment consists in keeping the lids clean and free from the discharge; this is best accomplished by soaking them in warm water and gently removing the crusts. Great care must be used so as not to pull out the lashes. This process may have to be repeated several times a day. At night when the child goes to bed the lid edges should be slightly anointed with Cosmoline. Staphysagria is a valuable remedy.

STRABISMUS — SQUINTING.

Strabismus or cross-eye may be either convergent or divergent, the former being the variety usually met with in children. It is due to an abnormal contraction of the muscle that pulls the eye inwards which eventually causes a permanent shortening. The real cause of squint generally depends on a diminution of one of the diameters of the eyeball, whereby in order to have clear vision, eye is under a constant strain. This condition of the eyeball may exist from birth and is frequently inherited.

The only treatment for squint is an operation. This should be performed early, as when the deformity has once become fixed, the sight in the squinting eye rapidly deteriorates. Stramonium helps in slight cases.

OTITIS — INFLAMMATION OF THE EAR — EARACHE.

The ear is a trumpet with a thin membrane (drum) stretched across the narrow tube. Back of the drum (membrana tympani) are three little bones that transmit the vibrations of sound to the sensory nervous filaments of the ear, these convey them to the brain where they are stored.

Inflammation of this trumpet, its canal, or the membranes about the bones is of frequent occurrence and may arise from cold air, improper bathing, gastric or dental troubles, loud noises, neuralgia, foreign bodies, etc. The swelling in the confined canal causes great pain, especially when it is on the inside of the drum,

and worse at night on lying down; unnatural noises and deafness are common symptoms. The crying of children with earache is spasmodic and intermittent, puts the hand to the ear, or starts when the ears are touched. If the inflammation continues, suppuration results, and sometimes it extends to the brain and produces serious results.

The remedies are: Aconitum for pain, soreness, and throbbing in the ear; sensitiveness to noise; red, shining swelling of the meatus; feverishness. Belladonna when the head is much involved and the patient delirious. Chamomilla for earache in nervous, irritable children, with one cheek red and hot. Give Mercurius after suppuration has taken place. Pulsatilla in less acute and more persistent forms of the disease. Sulphur for chronic or recurring inflammation, especially in scrofulous patients.

Hot fomentations of water, or Aconite lotion, hot in the early stage, is found very soothing. After the poultice, a little cotton in the ear for a short time is necessary to prevent cold. If there be any discharge, the ear should be washed clean with warm water. This is easily done by letting the water run in the ear from the corner of a cloth, and thoroughly dried afterwards.

OTORRHŒA — DISCHARGE FROM THE EARS.

Chronic inflammation of the mucous membrane of the ear, with a milky, purulent, or bloody discharge, commonly met with in lymphatic children, following inflammation of the ear, measles, or scarlet fever.

The remedies are: Arsenicum for old standing cases in delicate children; excoriating discharges. Calcarea carb. for tedious cases in fat children. Hepar sulphur for discharge of pus and blood; and when the patient has been dosed with Mercury. Mercurius cor. for thick, bloody, fœtid discharge, tearing pains in ear and side of head, swelling and tenderness of glands about the ear. Muriatic acid following scarlet fever. Pulsatilla especially after measles or mumps. Sulphur in cases similar to those calling for Calcarea carb. When the child is hungry about eleven o'clock cries out in sleep.

Other remedies, as Aurum iod., Kali hyd., Mercurius iod., Nitric acid and Silicea may be needed to complete the cure.

The intractable character of this affection is often in a great measure due to the neglect of that strict cleanliness which is indispensibly necessary. The irritating discharge, if allowed to accumulate within the meatus, undergoes decomposition, and gives rise to changes in the deeper structures of the ear, the nature of which may be inferred from the irritation and excoriation so often existing in the external orifice. A little fine cotton frequently changed, may be put into the ear when the discharge is declining, to protect it in cold weather; but even this should be done with great caution, particularly when the discharge smells offensively, for nothing can be more prejudicial than stopping the ear with cotton to prevent its escape. Wiping the ear out with a camel's hair brush or soft rag saturated in alcohol or dilute Glycerine, sometimes dries

up the discharge in a short time. Change of air and food works wonders in these cases. Never neglect these cases or the result may be serious.

GENERAL MANAGEMENT OF THE EAR.

Avoid the exposure of children to loud sounds, especially to those of firearms, which may cause serious disorders, either rupturing the drum of the ear, or giving an injurious shock to the brain. When children have to be exposed to violent sounds, a little cotton should be introduced into each ear to guard the drum of the ear from the painful impression of a too acute shock. This precaution is increasingly important in illness, especially in diseases which involve the nervous system.

Imperfectly drying the head and ears of children after washing is not an infrequent cause of deafness or other mischief. It is the more necessary to guard against this danger, if there already exist any discharge from, or other disorder of the ear. The strictest care should be taken to dry the hair and ears thoroughly after bathing. As a further precaution a piece of fine blotting or tissue paper should be twisted into a coil and introduced into the cavity of the ear to absorb any remaining moisture.

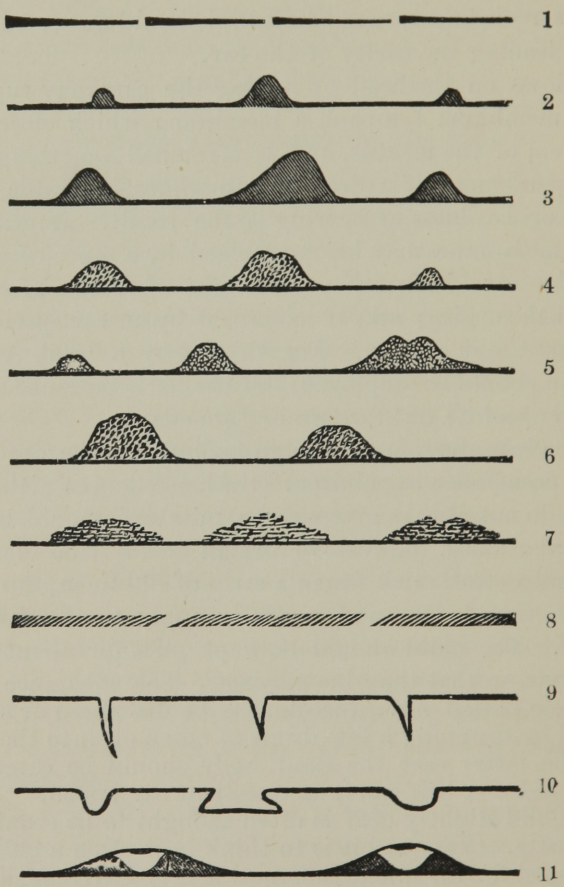
The screwed up corner of a towel does much harm. It forces down the wax upon the membrane, irritates the passage, and loosens small flakes of skin, which dry up and become hard, so that pain, inflammation, and deafness, may ensue. Washing should only extend to the external surface as far as the finger can reach, and

the screwed up corner of a towel should never be used for cleaning the cavity of the ear.

Blows on the head or boxing the ears may rupture the membrana tympani, a membrane which closes the bottom of the meatus, and is stretched something like the parchment of a drum. Sometimes incurable deafness or hardness of hearing is the result. Rupture of this membrane may be recognized by a sense of shock in the ear, deafness, and a slight discharge of blood from the orifice; and if examined by an ear speculum, the rent may be seen. For this injury a weak Arnica lotion should be employed, and the little patient should enjoy absolute rest for two or three days.

The introduction of foreign bodies into the ear is no rare occurrence in children. Such substances although they do not always give rise to mischief, should be removed at once. To remove foreign bodies from the ear: around a small stick fasten a strip of old linen, dip into warm liquid glue, and carefully apply to the foreign body. The child should be kept quiet for about half an hour, so that the glue may set. The substance may then be pulled out. Insects may be dislodged or suffocated by dropping a few drops of Olive oil into the ear. In the latter case the dead body should be carefully removed. A hair pin is an excellent ear spoon.

A child slightly deaf is often thought to be stupid or obstinate. Very sad it is to think how often a child is punished for his misfortune, and it may be irremediable injuries inflicted upon the mind or temper of the poor victim of unintentional injustice. Attention to training the child to hear distinctly, will discover this defect, and may also remedy it. Deafness should never be neglected.



Section view of various skin affections.

1. Macules. 2. Papules. 3. Tubercles. 4. Vesicles. 5. Pustules. 6. Bullæ. 7. Scabs. 8. Scales. 9. Fissures. 10. Ulcers. 11. Wheals. (After Kippax.)

DISEASES OF THE CUTANEOUS SYSTEM.

CHAPTER I.

GENERAL DISEASES OF THE SKIN.

The skin is made up of a layer of cells like shingles piled one on the other ;beneath the superficial layer or scarf skin is met the nerves and bloodvessels in the true skin. In the infant this outside coat is very thin, indeed so that the sensative nerves come near the surface. Remembering that the nerves of sensation are well developed we can understand why an iLfant is very sensative.

The skin is subject to many forms of disease. The profile of the various skin eruptions gives a fair idea of their many phases. Macules are simply discolorations of the skin; papules are slight elevations, as red gum, for example; tubercles are large hard papules, while vesicles are filled with water; pustules are the same filled with matter or pus, flattened in the center as they dry up; while bullæ are large water blisters. Scabs are usually dried up pustules, while scales are but a collection of scarf skin. Fissures are cracks, while ulcers are due to inflammation and softening of the tissues, and may follow a papule or pustule. Wheals are swollen ridges like bee stings, as in hives, and subside

without any other change. In rare instances bullæ follow wheals. It will be seen that some eruptions pass through various of these phases.

CHANGES IN THE SKIN AFTER BIRTH.

Before birth the skin was in contact with a fluid, consequently its surface was more like that of the mouth, *i. e.*, having a very thin layer of mucous membrane. At birth the change causes a rush of blood to the surface, which tends to rapidly increase the thickness of the skin, and thus protect the nervous filaments. But this rush, and irritating applications may cause an inflammation of the skin especially of the follicles, this is the well known

STROPHULUS—RED GUM

which as we see is not a necessary affection. It is often brought about by keeping the child too warm, by the use of harsh cloths and particularly soap. One of the best applications to prevent red gum is the early use of oil on the surface. This aids the rapid development of the scurf skin. If there is a feverish, anxious, restlessness, Aconite will quiet the case, unless there is colic and great irritability, then Chamomilla may be needed. The child should be kept cool.

SWELLINGS AND BRUISES

often result during labor from pressure, or handlings during delivery. Sometimes they are large tumors on the head. These should be bathed freely with Arnica

lotion to hasten absorption and to prevent suppuration. Bruises may be of various kinds. The same treatment is needed here. Arnica may also be given internally.

BATHING.

"How often shall I bathe the child?" is often asked, when the time honored custom of a bath every morning is prohibited. I answer, by asking how often do you bathe? "Once or twice a week," is the average answer. Does the child get dirty? "Why no, but I suppose I must wash it every morning." If it is soiled of course wash those portions, but a full bath is unnecessary oftener than three times a week. While the skin is maturing it should be oiled. If it is feeble it should be washed but seldom. Many a feeble child, as we remarked on page 58, is washed to death.

TOOTH RASH.

Sometimes while a child is teething the system may be feverish, with great irritation of the skin, and a papulous rash may make its appearance; particularly if the child is kept too warmly clad. Aconite or Chamomilla usually cures. The skin should be bathed gently, and proper clothing selected.

SWELLING OF INFANTS' BREASTS.

The breasts of infants usually contain at birth a secretion resembling milk. This, if not interfered with, is soon absorbed, and the swellings subside. But many nurses will not leave nature to have her own

way; they consider it necessary to effect a speedy removal of the fluid by squeezing the breasts. The consequence is that inflammation and suppuration are often produced. Cold may cause the breasts to swell.

When they get hard, Bryonia may arrest, but if the inflammation is high, Aconitum. If the redness is but slight, Arnica. It may also be used locally. If the redness assumes an erysipelatous character, give Belladonna. If suppuration has already taken place, give Hepar sulphur. The medicine chosen should be given every four hours.

INTERTRIGO—CHAFING—SORENESS OF INFANTS.

This is a redness and chafing produced by the friction of two folds of skin, especially in fat children. It is seen in the groin, armpits, and neck. Sometimes a fluid is exuded, the acridity of which increases the local mischief, and an offensive raw surface is soon produced.

The chief remedies are: Calcarea carb., in fat children. Chamomilla is very efficacious in colicy infants. Lycopodium, in very obstinate cases. Mercurius sol., for rawness and great soreness; it may also be applied locally. Sulphur, in chronic cases; much itching, redness about the anus.

The parts should be well washed with cold or tepid water and carefully dried, two or three times a day; a piece of linen saturated with Calendula lotion (a few drops of the tincture to a tumbler of water) may be laid between the opposing surfaces; or in bad cases a lotion composed of one part of tincture of Hydrastis to

five parts of Glycerine and five parts of water, may be applied in the same manner; dusting the chafed parts with a fine powder of starch is also useful. Sometimes any liquid increases the trouble. Scorched starch works nicely. The medicine in powder (Sugar of Milk) is an excellent local application. A scorched rag or silk, or oiled silk, are excellent.

URTICARIA—NETTLE-RASH—HIVES.

An eruption of little solid elastic eminences, roundish or oblong, pale in the center, and red at the circumference, attended with smarting and itching, as though the parts had been stung by nettles—hence the popular name. Towards evening, or when getting warm in bed, the patient feels an intolerable itching on the neck, arms, or body, and on scratching soon discovers large red wheals, the eruption rapidly enlarging under the irritation of scratching, which burn, tingle, or smart, and prove a source of great discomfort.

As seen in children it is generally due to indigestion, or eating particular articles of food, as bitter almonds, shellfish, oatmeal, etc. It may also be induced by a chill, or changes in the weather.

For remedies: Aconitum, when caused by chill, or accompanied with fever symptoms. Antimonium crud., When caused by shellfish or almonds. Dulcamara, in cases occurring in damp weather; much irritation. Pulsatilla, when caused by fat, pastry, or pork. Rhus tox., when small spots resembling flea bites, with purplish swelling and intense irritation, particularly on

the joints; it may also be used locally. Veratrum viride, intense pain and tingling; it may be used locally with great benefit. Hive syrup is a popular remedy, but is unnecessary when the above are used.

ERYTHEMA—SUNBURN.

Erythema, or simple redness of the skin, may result from many causes. It is sometimes the first symptom of erysipelas; usually due to indigestion or sunburn. In the former cases, Belladonna or Arsenicum are the remedies; while in the latter case, Aconite, or the local use of Cantharis will cure rapidly. If there are symptoms of sunstroke consult that disease.

ECZEMA—SCALD-HEAD—MILK-CRUST.

This is a disease that usually appears on the face and head first as a roughness of the skin which exudes a little clear fluid. These scales increase to scabs and the surfaces underneath and at the sides become very red. On the head the scabs form very large and the matter or pus is very copious. (The hair follicles are not destroyed as in tenia capitis.) The children attacked are usually the extra alkaline, like the child in the lower right hand corner of the group. Sometimes it is present when children are fleshing up, and is very persistent until the child gets fleshy; in such cases it itches greatly. It is often a relic of a summer vacation; I recall several such cases. Sometimes the ears, neck, and body are affected. Eczema is usually due to sweet or fat food. Arsenicum and Graphites are the principal remedies. Arsenicum for a burning corrosive dis-

charge from the skin which is scaly, especially in chronic poorly nourished cases. In Graphites cases the crusts are thick and exude a thick viscid pus on being pressed. Viola tricolor (Pansy) water is a domestic remedy of value. Other remedies may be indicated as follows: Antimonium tart,, for eczema impetiginodes; vesicles surrounded with red areola, especially about the nose, eyes, ears, neck, and shoulders. Calcarea carb., for thick scales with pus underneath; stools chalky; nutrition defective. Croton tig., for severe itching, with sickness, or painful diarrhœa. Mercurius sol., for bright red shining eruption, burning pain, brownish scabs, swollen glands. Rhus tox., much itching, worse at night. The most useful medicine for simple acute eczema, especially worse during damp weather. Sulphur, when situated chiefly on the head or vulva; violent itching; during convalescence.

When the irritation is excessive the following ointment will be of great utility: Nitrate of Bismuth, grs. 30; lard, 1 ounce, mix. The best local application is dry starch, and do not wash it off. Keep the parts protected. Great cleanliness is requisite. General baths and friction to promote the healthy action of the skin are of great service. The water used should be soft, hard water being irritating. Care should be taken not to spread the disease in washing. Vegetables, especially such as are eaten uncooked—lettuce, celery, etc.—may be freely taken. Cod-liver oil is particularly recommended, half a teaspoonful or a teaspoonful twice daily after food. To flesh up these thin cases Sweet

Almond oil may be applied once a day. Fleshy children may be given tart things to eat. If the food is too fat or sweet it should be changed.

CHAPS.

Sudden changes of the weather from dry to wet and cold, produces in the skin a dry inflamed condition that manifests itself by redness and cracks. The hands are chiefly affected, but the lips and also the feet of children that run barefoot are often affected. Protection is the best means of cure. The parts should be covered with some greasy article and then the hands should be wrapped in cloths at night, and should be if possible protected with gloves in the day. Shoes should be worn. The wrists and ankles should be well protected. Arnica lotion is excellent when they are bruised as well as chapped, and Calendula when there are sores. Glycerine diluted with three parts water is excellent. Soap should be used sparingly.

PERNIO — CHILBLAINS — FROSTBITES.

Chilblains, result from frostbites followed by a lack of sensitiveness of the parts so that they are chilled year after year. Sometimes with ulceration. One of the following remedies should be selected for similar symptoms:

Agaricus for stinging pains in the swellings; also when ulcerated. Arnica for hard, shining, painful, and itching swellings; in the early stage. Arsenicum for severe burning pains; also when ulcerated. Bella-

donna for bright-red swelling, pulsative pains. Headache in the temples. Cantharis for intense itching and burning. This is an excellent remedy. Pulsatilla for livid redness, itching and heat in the swelling, and worse towards evening. Rhus tox. is frequently indicated when the parts are much inflamed, or blistered.

All the remedies may be used externally as well, in the form of lotion or cerate, except Arnica, which should never be used for broken chilblains. Glycerine, or one part of Glycerine mixed with two parts of Cologne, is an excellent remedy for chilblains, chapped hands, fissures or cracks. It removes the stinging, burning sensations, and makes the parts soft and supple. Ulcerated chilblains may require a poultice, or other mild application, until relieved. The soreness of chilblains and chapped hands may be removed or mitigated by applying soft linen rags squeezed out of cold water, and then covered with oiled-silk or a kid glove. The compress should be applied on going to bed; it equalizes the temperature of the part, improves the nutrition of the skin, and diminishes the tendency to recurrence. The parts should be protected from cold.

PARASITIC DISEASES OF THE SKIN.

Parasitic diseases affecting the exterior of the body are of several varieties; dermatozie, or those produced by animal parasites; and the dermatophsie, or those from vegetable parasites. Having found a suitable soil, they grow more or less rapidly, and produce certain symptoms.

Tinea is the generic name of all diseases characterized by vegetable growths on or in the hair. Those most commonly found among children are the following:

1. *Tinea tonsurans* is known as the common scurfy ringworm, occurs most frequently in strumous children. Being contagious it is not necessarily associated with deranged general health. It occurs mostly between the second and twelfth years, as irregularly circular patches varying in size from that of a penny piece, the hairs of which look withered, dry, thickened, and as if cut off at a short distance from the roots. The skin is red or scaly. When the head is affected it is known as tenia capitis.

2. *Tinea favosa* commonly occurs when the child is about seven years of age, and appears as an eruption of sulphur-yellow, cup-shaped crusts, the central point of each being a hair. These may run together, giving rise to a honeycomb appearance; hence the popular name, honeycomb ringworm. It is contagious, but occurs more frequently in Scotland and on the continent than in America.

3. *Tinea decalvans* is more frequent in young girls than boys, and consists of patches of baldness, smooth, pale, and circular, one or several inches in diameter.

4. *Tinea versicolor* commences as small reddish points, with irritation and itching increased by warmth, and followed by irregular, fawn-colored patches, dry, rough, scaly at the edge, and slightly elevated, and from which scurf can be detached by rubbing. The

patches vary in size from half an inch to three or four inches in diameter, and occur mostly where the body is in contact with flannel, particularly on the chest, neck, and abdomen. Like the preceding, it is contagious, and its spread is favored by uncleanly habits. It is also called pityriasis versicolor, chloasma, variegated dandruff, and liver spots.

5. *Scabies* or *itch* is caused by the presence of a minute animal parasite, the sarcoptes hominis, which burrows under the skin, and gives rise to an eruption and an intolerable itching. The eruption is vesicular, presenting numerous small watery conical pimples, and appears most frequently between the fingers, and on the bend of the arms in children, or on the thighs and buttocks and lower part of the abdomen in infants, by whom it is occasionally contracted from uncleanly servants or nurses. The irritation increases at night and in bed.

6. *Phthiriasis — Lousiness.*—Three species of lice are found on the human body, namely, Pediculis capitis, P. corporis, and P. pubis. They run about and bite the skin, producing intolerable itching, and occasionally pustular eruptions; their eggs are called nits.

In the above diseases external applications are the chief measures to be employed in treatment. Sulphur is the great enemy to parasitic life, and its local application is the most effective means for destroying parasites. In the first four diseases, cleanliness, friction, and a lotion of Sulphurous acid will generally cure. An alkaline solution of Sulphur will eradicate both

vegetable and animal parasites, and may be prepared as follows: Take common Soda, half-ounce, and Flowers of Sulphur, half-ounce, and add water, half-pint. Simmer for half an hour. After well washing with soap, apply the clear liquid to the diseased part, and allow it to remain for twelve hours, and then be washed off with a little vinegar and water. In very young children, water may be added to the lotion before use. Sepia, Calcarea carbonicum, and Sulphur are sometimes useful, administered internally; Sepia in ringworm, Sulphur in scabies, and Calcarea in general unhealthy states of the skin, and for the debility which favors these diseases. For tinea capitis, Sepia or Mercurius. The latter may be used topically.

BURNS AND SCALDS.

Children frequently get burned or scalded. The parts should be covered at once with oil to exclude the air. Carron oil (oil and lime water) is an old-fashioned application. A cloth dipped in water in which Soda has been dissolved (a teaspoonful to a half-cup of water) may be kept on the parts, frequently wetting it from the outside. A poultice of flaxseed is excellent, but should be kept wet from the outside and changed as soon as the meal next the skin is dried up. Protection of the denuded nerves is the principal object desired. Cotton batting, flour, and articles that stick should be avoided, as they take off the new skin when removed. Urtica urens lotion or Cerate is excellent. Calendula if suppuration sets in. Aconite for the fever and fright, should be given. Belladonna for great pain, distress, headache. If the flame was inhaled, Carbo veg. Quiet and a generous diet aid rapid recovery. Deep burns will be apt to be followed by deformities. Consult a physician early.

CHAPTER II.

ERUPTIVE FEBRILE DISEASES.

It should be known that a high fever manifest by a hot dry skin is not always followed by an eruption. There is only one disease so ushered in, and that is scarlet fever; but here there is vomiting. A high fever is sometimes due to indigestion, and then there may be vomiting, but in such cases the fever is due to reaction from the nausea and effort at vomiting. The cause of the whole trouble is usually well known. A severe attack of diphtheria is usually ushered in with a high fever and aching all over, but the pain in the throat, with alternate chills on motion, will distinguish it.

SCARLATINA—SCARLET FEVER.

This much dreaded disease has been shorn of much of its severity by preventive treatment. Some years it is much more severe and complicated than others. For this reason there has come to be recognized three forms of the disease: simplex, anginose, and malignant.

Scarlet fever is ushered in with a high fever, very hot skin, rapid pulse, headache; sometimes chilly sensations, with nausea, vomiting, and sore throat. Sometimes sore throat is the first complained of, and this case may look like one of diphtheria. In the latter disease the redness is more confined to the tonsils, while

in this fever it is more general. The eruption makes its appearance in the mouth first as a red blush all over. The high fever continues, and on the third day the rash appears on the body. The high fever is really distinguishing. The tongue is coated whitish with red base. The tip is usually very red, and the coat clears off, leaving a red strawberry tongue. About the fifth day the rash begins to fade, and by the eighth day disappears.

In the simple form of scarlatina the rash is slight, the fever abates somewhat, the tonsils are not very much swollen; the child is bright and lively. The force of the disease is broken, and the child may make a rapid recovery. Sometimes the kidneys may be affected, even in these mild cases. In these cases there is little or no scaling off of the skin.

In the anginose form the throat swells very much, and the rash does not come out well. The swelling sometimes involves all the glands and is so great as to make the neck even with the head. In these cases the circulation of blood to the head is very much interfered with, so that the child becomes stupid, and coma may prove fatal. Diphtheria is apt to complicate this form.

In the malignant form the fever runs high, the rash is tardy in coming out, and is dark red; there is great prostration, and the mouth and tongue get very dark. The throat is livid, ulcerated, and the case assumes a typhoid type. The child is delirious from the first, and then gradually sinks away. This form is frequently

met in severe epidemics, and in low badly ventilated places and in poorly nourished children. In the severe cases the skin, especially of the hands and feet, peel off in scales or flakes. The effects of the fever may be to leave the glands of the neck swollen, and they may finally break and discharge pus. The inflammation may so affect the ears as to cause long lasting discharge. The inflammation in the kidneys may leave trouble there, *e. g.*, scanty dark urine, and dropsy of the feet —or all over the body.

The first remedy is Belladonna, especially when there is a simple redness, high fever starting. If it should prove diphtheritic no time will be lost. If the fever alternates with chills, and the child is very nervous, anxious and restless, and the rash does not come out well, Aconite should be given. But usually Belladonna will check the disease so that the rash will be mild. If the tonsils swell and the anginose form sets in, Mercurius bin. should be given, either alone or with the Belladonna, especially if there is much saliva in the throat and great difficulty in swallowing; urine red. If the throat is dry, red and puffy, and the urine scanty, give Apis instead. For imperfect eruption, stupid fever with remittent symptoms, give Gelsemium. For severe head symptoms with convulsions, vomiting, and rapid pulse, Veratrum viride. In malignant cases where the rash is purple and suppressed, with fætid discharge from the nostrils, cracks at the angles of the mouth, give Ailanthus until the rash is of a scarlet color and the bad symptoms subside. For malignant

sore throat, with great depression and tremors, give Muriatic acid. Cloths wet with salt water may be applied to the throat. When there is great mental and physical prostration, with a puffy throat, Ammonium carb. For severe prostration, excessive thirst for sips of water, cold clammy sweat, restlessness, weak pulse, offensive diarrhœa, give Arsenicum. When the disease begins to decline and desquamation does not take place readily, and the convalescence is tedious, and to prevent subsequent trouble, give Sulphur.

Many other remedies may be needed, *e. g.*, Antimonium tart., in the first stage, if attended with convulsions, cold sweat, difficult breathing, or vomiting; Baryta mur., for swelling of glands; Coffea, for restlessness and sleeplessness; Cuprum ac., for sudden retrocession of the rash; Digitalis, for little urine, dropsical symptoms; Hyoscyamus, for restlessness and sleeplessness; Kali hyd., for swelling of glands; Hepar, if the glands suppurate. Pulsatilla, for discharge from the ears (see Otorrhœa). For the urinary and dropsical symptoms, Apis, Arsenicum, Cantharis, or Terebinth. Sulpho-Carbolate of Soda may be given as a prophylaxis, especially if the diphtheritic form is prevalent, Belladonna 3, it is admitted by all authorities to be a most invaluable preventive. A dose should be given once or twice a day. If the disease attacks the child this remedy will render it light.

In the management of a case of this disease the child should be placed in a separate room which can be so ventilated as to secure a copious and continuous supply

of fresh air. The room should be as free from furniture as possible. Curtains, carpets, and woolen stuffs should be removed. A fire is necessary in cold weather. Condy's fluid or vinegar should be freely used about the room; will purify the air for the patient, and lessen the infection through the house. Sponging the surface of the body with tepid water, piece by piece, moderates the great heat and allays restlessness, quiets delirium, lowers the pulse, and favors sleep. Oiling the child freely lessens the fever, hastens the eruption to come out, and stops the itching. A wet bandage to the throat, when it is affected, is a sovereign remedy, and seldom fails to relieve. Inhalation of steam from hot water is useful when the throat is sore and painful. The wet-pack, especially at the commencement, is often most valuable, and it may be repeated several times, at a few hours' interval, as long as severe febrile symptoms continue; but it requires to be administered by an experienced person. When the eruption is slow in coming out, or is suddenly suppressed, the child should have a hot bath, or be packed in a blanket wrung out of hot water. During convalescence, warm clothing, including flannel, is necessary; and subsequently a change of air. The patient must not, however, go out too early, as secondary symptoms are of frequent occurrence from neglect of this precaution. It should stay in a month.

The diet during the whole course of the fever should be light and nourishing, and milk, either alone or with water, thin gruel, sago, arrowroot, yolk of egg beaten up with cold milk, grapes, oranges, and cooked fruits,

should be the staple diet. The drink may consist of cold water, gum-water, barley-water, etc., in small quantities as frequently as desired. Acid drinks should be avoided. As the fever subsides, the patient may gradually and cautiously return to more substantial food. Stimulants are rarely necessary, except in malignant cases, when extract of beef, beef-tea, milk, etc., may be given regularly in frequently repeated small doses as in diphtheria, under medical care. Sometimes wine or brandy, or a few drops of alcohol in water may be given for threatened prostration.

The attendant should keep isolated from the rest of the family. Over the ordinary dress a calico wrapper may be worn, and removed when outside of the sick room. The room and the clothing of the child and bedding should be fumigated with Sulphur burned on a shovel and then hung out to air away from the house, and then washed. This is a very infectious disease, and every mother will do all she can to prevent it spreading.

MEASLES.

This is an eruption in the form of small circular spots, resembling flea-bites, which multiply and coalesce into blotches of a more or less crescentic form, slightly raised above the surrounding skin, so as to be felt, particularly on the face, which is often a good deal swollen. It is like raspberry in color, and turns white for an instant under pressure; a dark purple color is a bad sign.

After about ten to fourteen days, the period of incu-

bation, the disease is ushered in with the symptoms of a catarrh — sneezing, running from the nose, red, swollen, and watery eyes, a hoarse harsh cough, languor and fever, which increases in intensity. About the fourth day of the illness the eruption begins, and appears in three successive crops, on the face and neck, on the body, and lastly on the legs. It is two or three days in coming out, and remains at least three days. The fever is highest on the fifth day (103°) then abates, and a bran-like scurf is gradually thrown off the skin. The scurf is thrown off in the following order; on the face, behind the ears, on the neck, chest, arms, trunk, thighs, and legs. As the rash declines, diarrhœa sometimes occurs; this, unless very troublesome, should not be interferred with, as it is often beneficial.

The eruption may be seen on the palate in small points, days before it appears on the skin. Sometimes measles and scarlet fever are confounded, but the differences are as follows:

Measles.	*Scarlatina.*
Rash appears on the fourth day.	Rash appears on the second day.
Begins near roots of the hairs in spots slightly elevated.	Begins on neck and face.
Color brownish-red.	Color rose-red or crimson.
Crescentic arrangement, with normal skin between redness.	Punctiform, almost uniform.
Slight branny desquamation.	Copious desquamation.
Accompanying symptoms, coryza and cough, heat of skin moderate.	Accompanying symptoms, sore throat strawberry tongue, great heat of skin rapid pulse.

During the attack, pneumonia, bronchitis, diphtheria, and inflammation of the larynx may arise. Phthisis, diphtheria, diseases of the glands and bones, chronic ophthalmia, otorrhœa, and skin diseases may follow.

In the early stage Aconite should be given every two or three hours to subdue the fever. As soon as the symptoms peculiar to the disease manifest themselves, Pulsatilla must be administered alone every two or three hours, or, if necessary, in alternation with the Aconite, at intervals of two hours. The cough almost invariably attendant upon the disease may be mitigated by a dose or two of Belladonna or Hyoscyamus. Give Antimonium tart. where there are decided bronchial symptoms, or nausea with white furred tongue. Belladonna for sore throat, dry, barking cough, etc.; headache, drowsiness, or restlessness, and tendency to delirium. Bryonia for imperfect or suppressed eruption, stitching pains in the chest, difficult breathing, cough, etc. For a sudden recession of the eruption, this remedy, or Aconite may be given every half hour. Euphrasia may be called for when the lachrymation is profuse. Sometimes this is all that is needed. Gelsemium, slow development or retrocession of the rash. Mercurius sol. 3 and Cor. 3 for ulcerous, glandular, or dysenteric affections. Phosphorus for dry, hollow cough, with tendency to pneumonia. Pulsatilla is almost specific, especially for the symptoms of cold, gastric derangement, phlegm in the chest, etc. It is most useful after the fever has been modified by Aconite, and rarely any other remedies are required. Sulphur, after the eruption has completed its natural course, and the other remedies are discontinued. It may avert secondary diseases. A dose morning and night, for several days. If after the decline of the

eruption, the patient retains a temperature above 100° F., some complicating disturbance may be suspected. Secondary diseases that arise should receive the first attention, as if independent diseases.

When the infant refuses to nurse in consequence of the closure of the nasal passages resort must then be had to artificial feeding with the spoon. Cold water, gum-water, barley-water, etc., are the best drinks. No stimulants. As the fever abates, milk diet may be given, gradually returning to more nourishing food. Should the eruption be imperfectly developed, or recede suddenly, the child should be put into a hot bath, or be packed in a blanket wrung out of hot water. During the whole of the illness the wet-pack and tepid sponging, with careful drying, should be employed once or twice a day, and the linen should be frequently changed. The patient should be kept warm in bed, with the room equably warmed to about 65°, but darkened and well ventilated. During convalescence care should be taken that the child does not take cold. As preventives, Pulsatilla every morning may ward it off; Aconite is sometimes also given in the evening during the prevalence of measles. The best time to have the disease is in the early summer.

ROTHELN — FRENCH OR GERMAN MEASLES.

This is a disease that resembles both scarlet fever and measles with this difference, there is neither the coryza of measles nor the high fever of scarlet fever attendant on its appearance, but it is ushered in suddenly. The

child in the morning may be found broken out from head to foot. The rash stays out about three days and then gradually subsides. In young children the rash assumes more the form of scarlet fever and is sometimes called scarlet rash, while in older persons the eruption more nearly resembles measles, and there may be quite a fever. It attacks those who have had both scarlet fever and measles.

Rotheln.	*Measles.*
Scarcely any precursory stage, the eruption ushers in the disease.	Preliminary symptoms. Fever and catarrhal symptoms.
Eruption on the first day and generally spreads rapidly all over.	Eruption on the fourth day, spreads from the face all over in about forty-eight hours.
Eruption closely resembles measles. In some cases more general efflorescence; fades rapidly; all gone by the second or third day; little or no desquamation.	Eruption crescentic, with intervening healthy skin, lasts about five days, followed by desquamation.
Catarrhal symptoms rarely present and quickly disappear.	Catarrhal symptoms characteristic.
Bronchial symptoms especially absent.	Bronchial symptoms always present.
No sequelæ.	Generally sequelæ.

An attack of measles does not protect from an attack of rotheln and *vice versa*.

Rotheln.	*Scarlatina.*
No precursory symptoms.	Precursory symptoms severe.
Eruption on the first day on the face and spreads rapidly over the body.	Eruption on the second day, first on neck and chest.
Eruption rarely confluent, discrete, crescentic, papular; gone by the second day, followed by no desquamation.	Eruption efflorescent, uniform desquamation after the seventh day.
Rarely sore throat or bronchitis, some coryza.	Sore throat, rarely coryza or bronchitis.
Tongue white with red edges.	Red "raspberry" tongue.
No sequelæ.	Sequelæ.

The remedy is Aconite if any is needed. If the eyes are injected and there is a loose cough, Pulsatilla. If there is sore throat, Belladonna may be given. The child should be kept quiet until the rash is gone. (Consult Scarlet Fever and Measles.)

VARICELLA — CHICKEN-POX.

This is ushered in with a slight fever, and on the second day pimples appear here and there feeling like shot under the skin. They rapidly become pustular and dry up, forming scabs, which fall off in six or seven days, leaving scars. On the third or fourth day a new crop of pimples come out, and in a day or two still another crop, so that while some are disappearing others are forming. This with the lack of inflammation and secondary fever serves to distinguish chicken-pox from small-pox.

Varicella.	*Varioloid.*	*Variola.*
Rash on first or second day.	Rash on second or third day.	Rash on third day.
First on back.	First on wrists.	First on forehead.
Papules, some not advancing, others vesicular, a few pustular, without umbilication; eruption irregular in progress.	Shotty papules, soon becoming vesicles only, others pustular, but pustules small and not confluent.	Shotty papules going on to umbilicated vesicles and then to pustules, with much inflammation around; often confluent.
Usually no scars.	Scabs seldom leaving scars.	Thick scabbing and scars left.
Constitutional symptoms insignificant.	Symptoms as in variola, but milder at first; no secondary fever.	Accompanying symptoms, pain in back, vomiting and fever; secondary fever.

The remedies for chicken-pox are not many. Rhus is the principal remedy. Aconite may be needed if the

fever runs high. Milk is the best diet. Keep the child quiet. Avoid colds and the child scratching the skin. Vaccination does not protect here.

VARIOLA — SMALL-POX.

In small-pox the fever is higher, the pustules are larger, more inflamed, become filled with matter. On the ninth day fever again sets in, the pustules fill, dry up with depressed centres. The prostration is profound in severe cases, and the disease is prolonged.

The scars left are deep and leave pock-marks. The child should be protected from the light and the surface kept saturated with dilute Glycerine, this prevents severe secondary inflammation and pitting. The food should be supporting and the care as in scarlet fever. The chief remedy is Tartar emetic. Other remedies may be needed; as Camphor for prostration; Belladonna for delirious headache, dread of light; Coffee for restlessness; Camphor, eruption suddenly disappears or assumes a malignant type with coldness. Apis for puffy eyelids and suppressed urine. Sulphur for irregular course, excessive itching, sequela. Vaccination is the best preventive. Arsenicum 1, Dr. Bowen says, will abort this disease.

VACCINATION — COW-POX.

This is performed by scratching the skin crosswise a few times until blood appears and rubbing dilute vaccine virus into the cuts. In from four to ten days a redness appears then a vesicle forms, fills with matter,

i. e., becomes a pustule and dries down and becomes an umbilicated vaccine crust. Some years, particularly when small-pox is severe, the scars will be enormous, and two or three scabs form until it heals. The more numerous the small dots in the scar the better protected the person is. Children should be vaccinated early in the spring or fall as it then takes best. When the vaccination works too severely, Arsenicum will control it. Sulphur for the sluggish healing.

ROSEOLA.

This is a papulous disease that looks like red gum on an inflamed base. It sometimes commences with a simple red blush and then the small pimples appear. It is also called scarlet rash. Belladonna is the chief remedy.

SIMPLE FEVER.

A high fever may result from suppressed perspiration, damp cold weather, wet feet, and without localized pains, etc. The timely use of Aconite will prevent its becoming localized. Simple fever is not so often met with as it was formerly. If due to indigestion the head will be most affected. The throat should be examined in all cases of fever.

WARTS.

Warts are abnormal growths of the skin. A raw potato applied will usually cause them to disappear. Thuja is a remedy that has removed them, taken internally, two doses a day.

Most of the remedies may be procured in two drachm vials, but persons far removed from a reliable Homœopathic pharmacy or physician should procure all these medicines in square half ounce vials, either in the 3d, 6th or 30th attenuations. It should be known that vials with pellets or powders can be sent to any part of the United States by mail; liquids are forbidden to go through the mails, but can be sent by express.

HOW TO SELECT THE REMEDY.

A few hints here, on the selection of the remedy may be helpful. To understand this thoroughly let us see how we select the disease-name. We take three or more prominent symptoms, and by them decide the nature of the disease. For example, a child has frequent slimy, bloody passages with straining. From these symptoms we decide the case to be dysentery. (If there has been vomiting and fever it may be entero-colitis). Now to select the remedy for such a case we inquire what remedies have caused and cured dysentery. Also what are recommended. We turn to page 273 and find that Mercurius cor., Aconite, Colocynth, Kali bich., Cantharis are the chief ones. But which is the best for our case. We do not try one and then another, but we compare the symptoms there given for each remedy and that one whose symptoms are most similar to those of the case, according to Homœopathy, is the one to be selected. We might give the child a dose of Opium tincture (Laudanum) and check the dysentery, stupefy the child, and possibly do it no serious injury, but then

that is a hazardous undertaking. The action of the mild, similar remedy, is charming in comparison. One great value of the Homœopathic method of prescribing is, that the very earliest symptoms of a case may be covered and removed with the remedy, and disease averted in its very incipiency, before even the most skilled could tell what disease was coming.

The great study of the mother should be, first, to feed and care for her child so that it will not get sick; second, to study well the symptoms of the various diseases, so that she can interpret the symptoms so as to know just what ails it and what to expect, and third, to study the symptoms calling for each remedy so as to know, for example, an Aconite fever from a Gelsemium, Belladonna, or Bryonia one. To do this most effectually, study what is said about a remedy under each disease, and group its symptcms all together in the mind. The remedies most used should be learned first. If a remedy does not have exactly similar symptoms to a case it may even then relieve. Careful nursing greatly aids recovery, and good nurses are very scarce. "The Nurse, or Hints on the Care of the Sick" will be found a great help in addition to the suggestions given under each disease.

When a skillful physician can be obtained the mother should summon his aid, and take the active and invaluable place of efficient nurse. It should be known that even a physician, when any of his family are ill, finds that sympathy confuses his judgment, and wisely calls the aid of the clear, cool head of a professional brother.

CHINESE METHOD OF CARRYING CHILDREN.

"Take them up tenderly,
Handle with care,—"

THE FORM AND ITS DEFORMITIES.

CHAPTER I.

NATURAL CHANGES IN THE FORM.

It is a sad fact that many, if not most of the deformities that we see in children as well as in grown people, are the result of carelessness or ignorance, or both.

We will glance at the proper management of the various parts of the bodily frame, and the customs of various people in handling their children. We will notice the deformity that habit or custom sanctions, and finally the best, most easy, and natural treatment of such defects and deformities, and the proper means of bringing about the highest and noblest physical development.

CHANGES IN POSITION BY THE INFANTILE BODY.

We will for a moment recount the various changes in position that the body undergoes during growth and development. During fœtal life it is curled up, the head bent upon the chest, the arms flexed and the knees drawn up to the chin. After birth the knees continue flexed for months, and when sleeping on the side the infant will try to curl up. The necessity for this we will see farther on. As the child grows the arms are first raised to the head and then extended, and the body

becomes more straight. The limbs are kicked out more and more, until finally it lies stretched out and walks erect. As old age creeps on, the form droops and becomes finally quite bent.

Another thing should be mentioned in studying this subject of the human form divine, and that is, we observe that the fat person walks and sits erect, with the head and shoulders well thrown back, while the thin person stoops and is inclined to "lop down all in a heap" when sitting.

The thin child will, for a long time, curl up when lying, while the fleshy little one will, of necessity, straighten out more and more.

INJURIOUS EFFECTS DUE TO CLOTHING.

Now, it is plain that nothing should prevent the infant from drawing up its knees and curling up when sleeping. Many a restless, nervous child is made so by being so bundled that it cannot assume its natural curled up position. How quickly some of these cases are relieved when stripped to see what is the matter. In the bent position the abdominal muscles are necessarily shorter, while those of the back are longest. Try to stretch out a new-born child, and see how its bowels drawn down in front, and the muscles of its legs are tense in front. Now remember that it breathes with these abdominal muscles, and we can readily understand why a corseted infant (one wound in clothing so that it *cannot curl* up,) will worry and cry, and act in distress. Now if given indigestible food, what torment it must

be in. Remember, also, the changes that the skin and surface of the bowels undergo the first few days, and again we see the necessity for loose, warm wraps about the infant. Does it not seem reasonable that much of the colic in infants is due to the wrappings? But this is not all, we will look farther. The spinal cord, as well as the muscles, is not yet ready for this new position. When thus violently put upon the stretch, wrapped in rough, warm clothes, with a sore navel in front, is it any wonder that infants have spasms (*trismus nacentium*), or later develop weak backs?

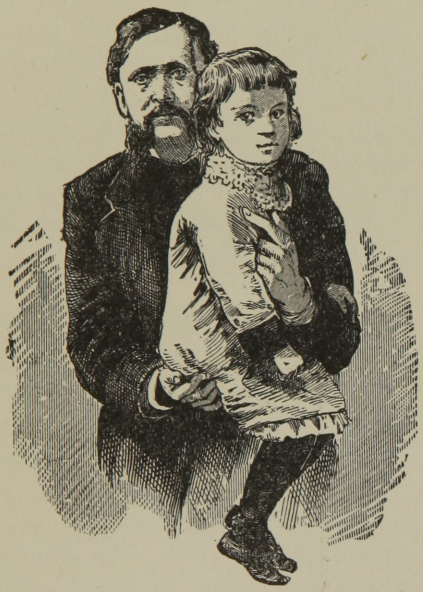
Turn to what is said about dressing the cord, and the first position of the child, and we are deeply impressed with the importance of loose wraps. A friend showed me a suit she had made for her child. It consisted of a loose canton flannel slip without sleeves, buttoned on the shoulders. The front breadth was cut off at the feet, while the back breadth was long and folded up over the child's feet, and buttoned to the front breadth. Over this was a loose short flannel dress, open in the front, with a box plait in both back and front. The sleeves of the dress were long and lined with silk. The usual diaper, of course, was put on first. In such a "rig" the child was not constricted in any of its movements, especially those of respiration and digestion.

The old fashioned swaddling bands, in which they used to envelop the child from head to foot, until it was more like a "stick of wood" than a delicate, sensitive infant, have given way before the dictates of wisdom and human kindness.

As the child grows the band is apt to be kept too tight. "Oh, it is not tight," says the mother, "see, I can put my whole hand under it." The child lies on its back, but sit it up and examine it after it eats and towards evening. I have cured many a case of colic and indigestion by pulling the pins out. The broad belly band should be hung from the shoulders by straps and should be buttoned, and two inches too large. All the clothes about the chest should be loose, very loose.

The diaper is sometimes worn so as to be injurious. It is sometimes worn so tight as to interfere with the flow of blood to the lower extremities, and the mother wonders that the child's limbs are so weak and that the legs and hips seem so small. Again it is often so large and forms such a wad, that the limbs are bent and the hips broadened, so that the back bends in and the walk is waddling, the well known bowlegs.

Other injurious effects of clothing will be referred to when we come to speak of the various deformities. The proper clothing for both infants and children is light, loose, and warm articles. Very little fault can be found with the present mode of dressing children. Infants are often dressed too warm, *e. g.*, a flannel band, two flannel skirts, a dress and a pinning blanket —all this is often put on a new-born child on a July day. It may not be too much in winter but it certainly is in summer. Dressing little children during summer in loose navy-blue flannel dresses is a sensible fashion. This can be substituted by tartan in winter and flannel drawers reaching to the shoulders with arm-holes,



Proper method of lifting a child.

making a warm, loose, comfortable dress. The feet should be clad in warm socks. At night many children are restless, especially if they suffer with stomach troubles, and should be dressed in night-drawers of flannel with sleeves during the winter and lighter material in summer. The flannel band should be worn night and day, if there is any inclination towards bowel troubles.

The attempt to harden a child by exposure is an erroneous method of procedure. While many children are bundled up so much that they are in a constant state of perspiration, others are rarely warm, as evinced by the blue hands and noses. Either extreme is to be avoided.

The method of lifting children has a marked effect upon growth and development. No one should lift a child by the arms. The child's chest is rounded and the body bends upon itself, so to take it under the arms with the two hands and lift it, is liable to compress the chest and to weaken the back. The weight of the lower part of the body and the clothes tends to weaken the small of the back. The proper method of lifting a child is well shown in the illustration. The effect of compressing the chest has been carefully studied by Dr. J. N. Tilden, who says, "that vital capacity is often diminished by compression of the thorax during infancy." This is well shown in the accompanying diagram, which illustrates the lateral half of the chest extending from the spinal column round to the breastbone. The lines correspond to the

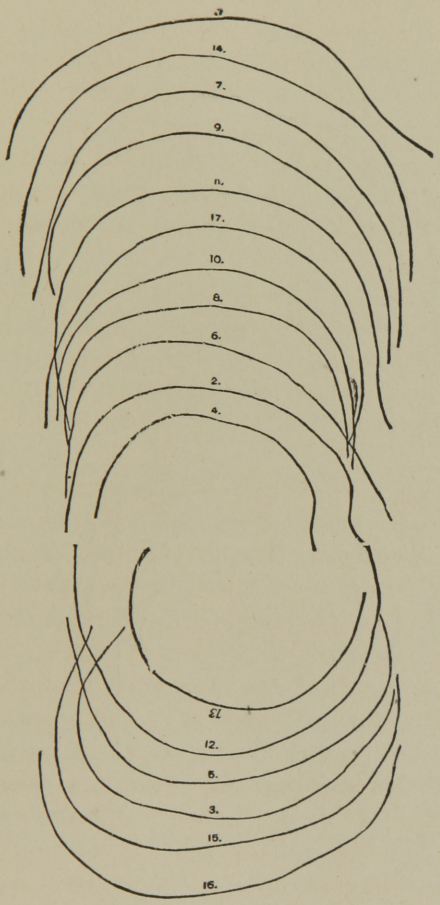


Diagram of the lateral curve of the chest, extending from breast-bone round to the back-bone, showing the effects of compression in different children.

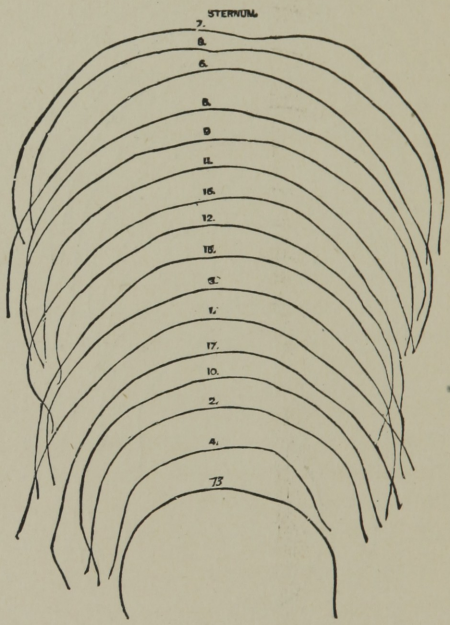


Diagram outline of the front of the chest, extending from the arm-pits across on a line with the nipples. These lines are reduced one-fifth from actual measurement, taken from seventeen children, varying in age from two weeks up to three and a half years. These diagrams will fairly illustrate the average as we would find it in a hundred cases, showing the depressions in front.

ribs and show the effects of compression. Line number 1 shows the deformity almost to a pigeon breast.

The effect upon the front of the chest is shown in the other diagram. The lower half circle is the normal chest and the deviations are very apparent.

The method of carrying children differs with different nations. The Indian method is well known. An Oriental method is to put the infant astride the shoulder. A Welch method is to wrap the end of a shawl around the child and pass the other end over the shoulder and under the arm on the opposite side bringing it and holding it with the hand under the child. That gives one free arm. The Chinese method is convenient where there are a surplus of men. The modern baby carriage is an improvement, except in a rough country. The proper method of carrying an older child is shown on another page. The head of an infant should be supported with the fingers.

The change in the form is marked. The stomach is the most prominent part of the child's body, and should be for several years. The great changes are towards puberty when the hips of girls should broaden, while the shoulders of boys should be quite broad. This change will make the girl's abdomen full low down, while the boy's will be full at the stomach. The chest in both cases should be full, and especially in girls. The shape of the chest in girls should be heart-shaped, more flattened under the arms, while in boys it should be more flattened in front. The small of the back should be bowed in and not bowed out like the letter C, which will cause them to "sit all in a heap." If the child is as fleshy as it should be, and trained to walk and sit erect, it will have a fine form. If the girl sits erect the hips will be broadened, and the waist will appear small. Attention to these minor points will develop an elegant figure, and carriage.

Proper method of carrylng a child.

CHAPTER II.

THE BONY FRAME AND ITS DISORDERS.

The bones are made up largely of lime-stone (carbonate and phosphate) and are the frame-work of the system. The backbone is a number of small bones placed one above the other and held together with ligaments. The ribs, legs and arms are the long bones. The ribs are flat to protect the chest. The bones of the head are also flat, but arched so as to protect the brain. The bones grow from centre points, and are really ligaments filled with lime. If the bones are not well developed, the various organs are injured by crowding. Lime is therefore necessary for the child, especially during growth. Whether the person is tall or short, depends largely upon the amount of lime salts absorbed. It will be evident then that locality will have a marked effect upon the bony system, for example in a lime-stone region where digestion and absorption are rapid; in a dry region the child will grow rapidly tall, while in a region deficient in lime-salts, the child will be short of stature, squatty. In some sections the development of this system is so great that the bones will be long and large, the teeth will be enormous, the cheek bones prominent, presenting the well known raw-bone appearance, especially if the muscular system is also well developed, and the fat deficient. Excess of fat seems to interfere with the deposit of lime, and vice

versa. Activity comes in as an important factor. The fat is absorbed during activity while the muscles and bones are correspondingly nourished. The marked contrast between the Indian men and women is a good illustration on this point. The development of this bony system, should be closely watched. The open in the child's head is a good point for observation. The length of the child is a good guide. It should grow two inches every month in the womb. At birth it should be eighteen inches high.

A healthy child, male or female, grows in length by more than one-half its size during the first two years; it increases from 18 or 19 inches to about 31 inches. It trebles or quadruples its weight; that is to say, it weighs at birth about 7½ to 10 pounds; 25 pounds in the first year; 30 pounds in the second.

The following is the rate of monthly increase in the first year, the initial weight being 8¼ pounds: First month, 10 pounds; second month, 11.8 pounds; third month, 12¾ pounds; fourth month 14¾; fifth month, 16¼ pounds; sixth month, 17½ pounds; seventh month, 18½ pounds; eighth month, 19½ pounds; ninth month, 20½ pounds; tenth month, 21¼ pounds; eleventh month, 21¾ pounds; twelfth month, 22¼ pounds. Wagner, (General Pathology, p. 37,) says: "Such special determination of increase of weight have not merely a theoretical value, but also a practical one, for by them we can test in a certain manner the usefulness of a given infant-food (mother's milk, nurse's milk, artificial food.)" On the average, a child (from six months to

eight years) grows in length about 2½ inches each year. The weight of the body goes on increasing to the eighth year rising in boys to 50 pounds, and in girls to 47 pounds. From this age until puberty, boys increase in height over two feet, reaching at the age of twelve years a height of over 4.52 feet, and girls 4.4 feet. On the average boys gain about 5 pounds in weight per year, girls a little more, so that in the twelfth year children of both sexes weigh on the average about 75 pounds. From thirteen to twenty years, youths grow some 11.8 inches, girls 7.8 inches. The increase of weight is even more rapid than before, reaching 145 pounds in boys eighteen years old, and in girls of the same age, 127½ pounds. (For subsequent growth see How to be Plump, p. 27.)

If the bony system is well developed, the open of the head will not be large and may be closed entirely, which should not occur until the child is over a year old. If the bones are deficient, the opening in the head will be large and the bones very thin; while if they are well formed, the opening may be large. In such cases the edges of the opening will be thick and will close slowly. Under such circumstances there is so much lime as to interfere with the healthy functions. It will teeth slowly and be tardy in walking, will sweat much about the head, and pass much water. Calcarea or Calcarea phos. will control this. The food should have less lime and the water it drinks should be boiled.

Hump-back is usually due to softening of one or more of the bones in the back and results from lack of

lime in the food, or to an injury, as falling on the head or shoulders, blow on the back, etc., that sets up an inflammation in these bones. These cases need treatment at once, which consists of an apparatus for lifting the upper part of the body off from the sore bone, and in lessening the inflammation by rest, and the use of Staphysagria, Calcarea or Hepar as a competent physician should decide.

Curves of the bones of the legs may be outward as in bow-legs, or forward. This may result from deficient lime, too early attempting to stand, a large diaper, or from stomach troubles that generate so much lactic acid as to dissolve the lime out of the bones. If due to the stomach trouble, this should be cured and the child kept quiet or acquired hydrocephalus may result. If due to deficient lime salts, as when starchy food is taken alone, and in large quantities, the food should be at once changed. Here Entire Wheat flour or oatmeal will be excellent. In either case the child should be kept off from its feet until the bones are strengthened. It is in these cases that mechanical supports are of such excellent service. A few months of proper treatment may change a bowlegged, deformed child into a tall, finely formed one.

Rickets is really due to the deficient lime salts in the food, or to their being dissolved out by stomach disorder, chiefly gastric catarrh. The action of the muscles changes the shape of the bones so as to produce hideous deformities, as pigeon breast, hump back, short bowlegs, large head, flat face, etc.

Hip-joint disease is an inflammation of the hip-joint that results in throwing the head of the bone out of its socket, and serious lameness is the result. In the first stage the pain is often referred to the knee, and the parents may think it growing pains, so-called. When the knee is crooked and pressed upon the location of pain can be decided. Hepar may prevent the progress of the disease. When dislocation occurs, an apparatus especially made for the case should be secured at once, and under the care of a skillful physician the deformity may be cured, or at least greatly relieved.

"Fever sores" or ulcer of the bones are frequently the result of a chill to the bone when heated, for example, children wading in cold water after playing, etc. The severe pain in the leg or arm and fever, may be mistaken for rheumatism, but the great pain and swelling will decide it something more serious. Here Belladonna or Bryonia will relieve, to be followed by Hepar if matter forms. For old fever sores or bone abscess, Silicea will stop the discharge. When the bone is enlarged, Calcarea phos.

Cramped feet very often result from carelessness in allowing a child to wear shoes when they are too small. Few people realize how fast children's feet grow. The shoes should be broad and wide. There is something of a heathen admiration for small feet, especially in the case of girls. It is a good thing to allow children to go barefoot, especially if the feet are thin. If untrammelled by shoes, stockings or garters, the muscles, bones and ligaments of the lower extremities will soon

be well developed. One summer will do wonders for some delicate cases. When cold weather comes these extremities should be protected.

Corns are callosities that result from compression as of tight shoes, or friction, as from too loose ones. The treatment is to bathe the part well with hot water, and apply potash to the spot. Scrape it well and repeat the operation for several nights.

Bunions are due to cramped joints that inflame. They may result from rheumatism. Remove all pressure, apply a compress wet in Arnica water, and give Rhus. If the result of rheumatism, Bryonia.

Growing pains or legache is a form of rheumatism that demands skillful attention. Here may be needed Staphysagria for steady ache; Bryonia for shooting pains; Kali iodium for ache at night; Belladonna, worse on lying down; Cina where the stomach is also out of order (see Chronic Gastritis).

Broken bones are not often met in children except when they are very brittle. Their bones usually bend and crack. Deformities are sure to follow unless these cases are most skillfully cared for by a competent physician, and even then in a young child deformity may result. Arnica given here will lessen the fever and aid rapid union.

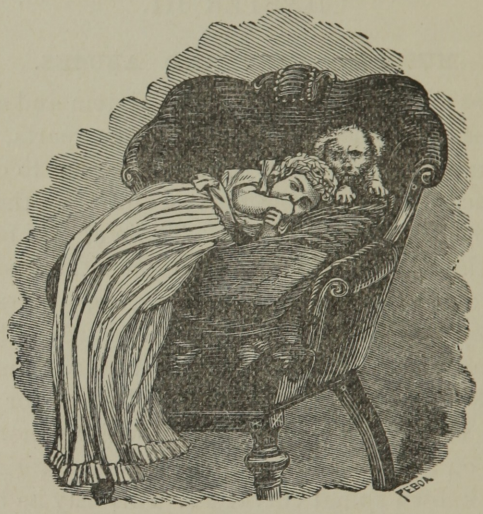
The bony system needs [proper food so that it will be strong enough for the purpose, and not so brittle as to break on a slight fall.

CHAPTER III.

MUSCLES, USES AND ABUSES.

Muscles are the lean meat of the system and are very numerous, stretched between various parts, chiefly from bone to bone. They have the power to contract under the stimulus of the nerves, and thus they move the various parts of the body. Those of the back and extremities are largest, so as to keep the body erect and move it, as in walking, running, etc. Those of the neck keep the head up. If they are weak the head lops all around. If one set are contracted from cold, a stiff neck is the result. If the child stands or sits on one side the muscles on that side will be shorter and the ones on the opposite side will be longer, giving us the well known spinal curvature. This may be brought about by nervous irritation or disease of the bones, usually, however, it is due to irregular muscular contraction. The remedy is a spinal brace and diversion to help tone up the general system. Nux vomica is a good remedy for both stiff neck and curvature. The back may be bathed with Arnica. Defective feeding does much to make weak muscles. This system needs nitrogenous food which is food like milk, meat and whole wheat meal. Starch-fed children are plump but have no muscles. Animal food makes wiry muscles. Activity must help to develop this system.

There are some bad habits that affect this system, one is thumbsucking.



This is one of the earliest bad lessons an infant usually learns. While it is being dressed, as it is rolled on its stomach, its little hands come in contact with its face, and at once, it, like a bird, opens its mouth and begins to suck at anything in contact with it, be it clothes or its hand, fingers or thumb. The friends exclaim, "Do see it sucking its fist already!" Sometimes the nurse dextrously slips its thumb into the mouth to keep it from "crying so." It only needs a few lessons of this sort, until involuntarily it sucks its thumb. This looks cunning in a baby but disgusting in an animal or in a child several years old. It is a

very bad habit for many reasons, leading to disease and deformity.

The constant suction flattens the palate unusually develops the muscles of the jaw, keeps the glands active, and is one of the causes of gastric catarrh, besides learning it the habit of keeping something in its mouth.

Defective talking, as well as defective walking, sometimes arises from deficient muscular development, but it arises more often from not properly using the muscles. Fullness of the vocal and throat muscles should be cultivated.

Defective, awkward walk arises chiefly from children striding too far. The regular stately tread of the soldier is only eighteen inches. A short, quick step is beautiful in a girl, but it should not be too short as the muscles will be so short that a waddling gait will be the result. A long step will produce a flat foot and a rocking gait, while if it is too short the feet will be high on the instep. A medium step should be taught the child, as that will insure a beautiful, graceful carriage.

Stoop shoulders is produced by an undue strain upon the muscles of the back and is due to a long, hurried stride, long sitting, as at school, etc.

DEFORMITIES FROM SCHOOL LIFE.

A child's muscles, like those of any one else, must have frequent change. No greater injury can be inflicted than to make a child sit or stand for a long

ABCDEFGHIJK
LMNOPQRSTUV
WXYZ
1234567890

time in one position. The fibres of the muscles get stiff and lose their feeling, or knot up in rebellious cramps. Stand with one or both arms extended but a few minutes, and how they will ache. The old method of making a child sit for an hour or more in one position, often with no prop for the back, nor rest for its feet, did much to produce the awkward appearance of the country school boy. The sitting posture puts on the stretch the muscles of the back, which brings about sooner or later, stoop shoulders. The relief when called to the class, is too vivid in the memory of all to be forgotten. The order to "toe the mark" was an infliction that was gradually and quietly avoided. The bright boy at the head of the class, supports his tired back by his hands in his pockets, while his toes are held in subjection. The brain of that boy is sapping his vitality, by taking the blood away from the rest of his body. The fat little miss at his left rebels at the constrained position, and takes the soldier's position of "rest." The next boy's feet are separated while his hands are thrown around to relieve his back. The second girl has evidently spinal irritation and a commencing curvature, from the long constraint of school life. She is plump enough to have a fine erect form. The teacher is a victim evidently of a tired back and entirely ignorant of the training the body needs. Who has not seen such a school and voted it "tiresome?" It is worse, it is crippling to both mind and body. See the blank, stupid stare on the faces of all.

What a relief to turn to this pleasing picture of a modern improved method. We can see the effect of the old defective method in the constrained position of the thin chested girl with a large, active brain, at the head of the class. What a pleasing study is the finely developed young miss who is associating the name and form of the letters with the picture above. See the active interest of all as she makes the discovery. There is no special effort at constraint, and they all assume the best position of relief that active interest is sure to bring, especially in the presence of the unconscious influence of a graceful well-formed teacher. Why should not the body, as well as the mind be carefully trained and developed at school? "A sound mind in a sound body," implies that physical training should precede and accompany education of the mind.

DEFORMITIES FROM DISEASE.

Pigeon breast may result from compression, deficient formation of bone in the ribs due to defective nutrition. It also arises from the muscular strain of coughing. This is a frequent sequela of hooping cough.

Rheumatism results from muscular cells decomposing in the tissues and poisoning the system. We may have rheumatism of the muscles, joints, or general system. There is fever and inflammation, more or less severe in each. When the digestive organs are deranged and the system gets chilled, then rheumatism arises. The best remedies are Rhus if it is muscular, Bryonia if confined to the joints, and Aconite if it is general.

A sprain is a sudden and a severe stretching of the ligaments of a joint. The joint should be tied up tight and kept so until the ligaments are strong.

Dislocations sometimes arise when the ligaments are weakened, as in excessively alkaline subjects. It may be due to the use of Ammonia. One child that lived over a stable was severely troubled with its thumb getting out of joint. In those due to deficient bony formation, Calcarea phos.; if the cause is relaxation of the ligaments, Thuja. It will be seen that the whole system should receive the most watchful care. The digestive organs should receive the first attention, then the food should be adapted to the wants of the whole system. The child should be kept plump; this will be difficult during the active days of from three to ten or

more years of age, but a careful study of the food question, and "How to be Plump," should enable the mother to accomplish this necessary development.

DEVELOPMENT AND TRAINING.

As the child grows the bones and muscles need special training. To study the whole child and the development of the various parts of the body and the perfection of its functions is more interesting than the study of the growth of an empire. To take part in the moulding and developing of a child into a perfect man or woman is an honor that any one should take an honest pride in.

A well-developed boy should be of good size, plump, bright and active; and a model girl should be well formed, plump, modest, and gentle. They should exercise freely both out of doors and in, under proper restraint. Restraint means self control which ensures a successful afterlife. Boys in games and sports should be taught a gallant chivalry, while girls should soon learn that modesty is a jewel of priceless value.

This should be the spirit to animate each, and the zest for games and sports should be carried into study and work. As children develop they should receive the same attention and courtesy accorded to grown people. They soon begin to feel the responsibilities of life, should they not be accorded its honors?

Babies are fed
On milk and praise.

INDEX AND GLOSSARY.

A

Abdominal organs and diseases, 253.
Abscess of bones, 407.
Absorbent system and its diseases, 281.
Accidents, avoidable, 47.
Acid child, 69.
  Food needed by, 71.
  feeding habits, 73.
  food affects growth of child, 43.
Alkaline child, 69.
  food needed by, 71.
  feeding habits, 73.
  climate effect, 163.
Almond milk, sweet, 104.
American and English children, 167.
Animal milk compared with human, 93.
  illustrated, 95.
  made like human, 98.
Angina pectoris (Breast pang), 330.
Aphthæ, 221.
Artificial milk, 103.
Asses milk, 96.
Attitude in sickness, 198.
Autumnal catarrh, 305.

B

Back, stiff, 409.
Bands, bad effects of, 395.
  needed, 59.
  too tight, 396.
Bathing at birth, 58.
  how often, 367.
Beauty lines of, 24.
Beef tea extract, 119, 138.
Birth, care before, 34.
  growth before, 34.
  natural, 51.
Bleeding from the nose, 306.
Blepharitis (inflammation of the lids), 358.
Bloody flux, 272.
Bony development, food needed during, 133.
Bony frame and its disorders, 403.
Bony frame, lime effects, 403.
  large, 403.
  small, 403.
  effected by fat, 403.
  effected by climate, 403.
  how developed, 405.
  broken, 408.
Bottle care needed, 131.
  feeding, 150.
  when to take away, 159.
Bowlegs, 406.
  caused by diaper, 396.
Boy, height of, 405.
  model, 416.
  weight of, 404.
Brain, diseases of, 333.
  development, 333.
  training, 335.
  inflammation, 338.
Breath in sickness, 203.
Breast milk, food to supply lack of, 89.
  pump, 77.
  poor, careful nurse better than, 88.
Breasts, gorged, child starved upset on, 78.
  infants starved at, 83.
  swelling of, 367.

Broken bones, 408.
Bronchitis (cold on the chest,) 320.
Bruises of the head, 366.
Bunions, 408.
Burns and scalds, 376.

C

Canada effect upon children, 168.
Care before birth, 37.
of mother and infant, 53.
premature infant, 55.
mature infant, 58.
still-born, 53.
Catarrh, acute gastric, 241.
chronic gastric, 242.
enteric, 261.
nasal, 302, 304, 305.
Cancrum oris, 223.
Causes of disease, 162.
climatic, 162.
hygienic, 177.
natural, 173.
predisposing, 175.
seasons as, 176.
dietetic, 179.
Chafing, 368.
Changes in the infant body, 393.
natural in the form, 393, 401.
Chaps, 372.
Chest, cold on, 320.
development, 327.
diseases, 320.
effects of compression, 398.
training, 327.
Chilblains, 372.
Child, bad effects of hardening, 398.
care of at birth, 53.
changes in, 32.
face index of health, 28.
in health, 31.
six months, should feed. 78.
Child starved, upset by nursing, 78.
wait three days for food, 68.
wet-nursed, when to wean, 82.
Children, artifical feeding, 83.
care before birth, 34.
climate effects on, 162.
healthy, 23.
healthy effect by parents, 35.
healthiest time to have, 36.
how to study, 22.
method of lifting, 398.
remedies for, 182.
sick, food for, 140.
causes of, 162.
seasons, effects on, 176.
Cholera infantum, 267.
morbus, 271.
Chorea, 351.
Circulation in sickness, 207.
Climate, Canada effect of, 168.
English effects of, 167.
French effect of, 172.
German effect of, 172.
states effect of, 169.
Switzerland effect of, 173.
Clothing, injurious effects of 394.
model, 395.
proper, 396.
necessary for infant, 59.
Colostrum of cow's milk, 95.
human milk, 63.
Compression, bad effects of, 398
Condensed milk, 101.
composition, 102.
made like human, 103.
Constipation, 274.
food for, 137.
Consumption, 285.
Convulsions (fits), 344.
Corns, 408.

Coryza (cold in head), 302.
Cough, 324.
hooping, 325.
Cow-pox (vaccination), 389.
Cramped feet, 407.
Cream as food, 128.
Croup, false, 313.
diphtheritic, 312.
membranous, 316.
pneumonic, 322.
spasmodic, 315.
Cry in sickness, 201.
Crying, 344.
Curvature of spine, 409.
Cyanosis (blue disease), 330.

D

Decay of the teeth, 232.
Deafness, 363.
Defective talking, 411.
walking, 411.
Deformity from broken bones, 408.
from pressure of, 396.
from school life, 411.
from disease, 415.
Dentition and its disorders, 224.
first, 225.
difficult, 227.
Development of boy, 404, 416.
of girl, 404, 416.
Dextrin foods, 105.
Diaper too tight, 396.
too large, 396.
causing bowlegs, 396.
weak back and legs, 396.
Diarrhœa, infantile, 257.
Dietetic causes of disease, 179.
rules for different ages, 127-147.
Digested, how milk is, 97.
Digestive organs and diseases, 211.
functions of, 211.
Diphtheria, 310.
and scarlet fever, 378.
Dislocation, 415.
Diseases, brain, 333.
bony frame, 403.
bowels, 293.
chest, 320.
dietetic causes of, 179.
eruptive, febrile, 377.
eyes and ears, 353.
heart, 329.
natural bias toward, 173.
nervous system, 343.
mouth, 213.
predisposition to, 175.
skin, 365.
stomach, 240.
teeth, 227.
throat, 308.
tongue, 213.
urinary organs, 293.
Dysentery (bloody flux), 272.
Dysuria (painful urination), 279.

E

Ear, diseases of, 353.
ache, 359.
discharge from, 360.
management of, 362.
bodies, 363.
Easy labor, how to have, 48.
Eczema (sore red skin), 370.
Egg food, 122.
drink, 131.
English vs. American children, 167.
Enteralgia (colic), 257.
Entero-colitis (inflammation of the small and large bowels), 261.
Enteritis (inflammation of the small intestines), 269.
Enteric fever, 287.
Enuresis nocturna (wetting the bed), 295.
Epistaxis (nose bleed), 309.
Epilepsy, 347.
Eruptive febrile diseases, 377.
Erythema (red skin), 370.

Eye, diseases of, 353.
babies, sore, 354.
weak, 356.
tumors of, 357.

F

Face changes from development, 32.
flat, 29.
index of health, 28.
of sickness, 195.
of healthy infant ovoid, 28.
oval, not hatchet, 29.
Falling of the bowels, 276.
Feeding, artificial, 83.
habits, of acid and alkaline children, 73.
during second summer, 144.
maternal of infants, 61.
Fever, bilious, remittent, 287.
gastric, 287.
hay, 305.
typhoid, 287.
remittent, 287.
scarlet, 377.
simple, 389.
sores, 407.
Fits, 344.
Food best when partially nursed, 85.
beef tea, 119, 138.
bran bread, 116.
bread, 117.
boiled flour, 106.
carrot, 111.
Cerealina, 114.
coffee as, 125.
cold, 119.
cracker, 117.
cream, 126-128.
Damascene, 120.
dextrin, 105.
eggs as, 122, 131.
extract, Lebig's, 119.
farinaceous, 108.
Food, farina, 114.
first for infant, 60.
fish as, 121.
for first six months, 128.
for second six months, 137.
for third six months, 141.
for fourth six months, 145, 147.
for sick children, 140.
flour, 107.
flour with sugar, 114.
fruits, 123.
gelatine, 110.
Gerber's milk, 107.
graham flour as, 116.
grains compared, 133.
Granum, 109.
gruels, 116.
hominy, 115.
Horlick's, 105.
Indian corn, 112.
Liebig's, 105.
Leguminose, 108.
meats as, 118.
most infantile, 126.
mucilage, 110.
mush, 115, 116.
Neave's, 108.
needed by alkaline, 73.
needed by acid children, 71.
needed by different children, 68.
needed during bony development, 133.
Nestle's, 107.
Nutrina, 114.
oysters as, 151.
panada, 116.
Papoma, 114.
potato, 112.
Prolactea, 101.
Racahout, 115.
raw meat, 120.
Ridge's, 109.
rye bread, 116.

Food, starch, 109, 130.
starch harmful, 134.
soup, 110.
sponge cake, 118.
sugar of milk, 130.
toasted, 117.
to supply breast milk, 89.
unfermented, 117.
vegetable soup, Victor's, 107.
wheat coffee, 125.
cracked, 112.
entire, 112.
prepared, 112.
Zweiback, 117.
Form and its deformities, 393.
Fountain syringe, 152.
Frostbites, 370.

G

Gastric catarrh, 241.
catarrh, chronic, 242.
inflammation, 244.
inflammation, chronic, 247.
Gastro-enteritis (inflammation of stomach and bowels), 267.
Genital irritation, 299.
Gestures index of sickness, 198.
Girl, height of, 405.
model, 416.
weight of, 404.
Glands of the mouth, 237.
of the bowels, 281.
Glandular obstruction in the lungs, 283.
Glandular obstruction in the neck, 285.
Goat's milk, 96.
Goitre (enlarged neck), 286.
Grains, food compared, 133.
food ilustrated, 135.
Gravel (stone in the bladder), 298.
Growing pains, 408.
Growth before birth, 37.

H

Habits of nurse affect milk, 76.
Hardening child, bad effects, 398.
Hay fever, 305.
Head, diseases of, 333.
ache, 341.
closed, 404.
heat in, 337.
open, 405.
Health, infant in, 23.
points of, 24.
face, index of, 28.
of parent affect children, 35.
Healthiest time to have children, 36.
Healthy children, 23.
children, all mothers may have, 34.
Heart, diseases of, 329.
palpitation, 329.
rheumatism of, 331.
weak, 332.
burn, 332.
Heat stroke, 342.
Height of infant, 404.
of child, 404.
of boy, 405.
of girl, 405.
Helpless innocence, 21.
Hereditary impressions, 39.
Hernia, umbilical (navel), 253.
Hiccough, 327.
Hipjoint disease, 407.
dislocation of, 407.
Hives, 369.
Hoarseness, 318.
Hominy, 115.
Hooping cough, 325.
Human milk, animal milk made like, 98.
milk compared with animal, 93.
Hump-back, 405.
Hydrocephalus (water on the brain), 340.
acute, 339.

Hydrocephalus, chronic, 340.
acquired, 340.
Hydrothorax (water on the chest), 323.
Hygienic causes of disease, 177.

I

Icterus (jaundice), 254.
Indigestion, 251.
in health, 23.
in health, looks and acts, 23.
Infant face healthy, ovoid, 28.
effects of location, nationality, temperament, 27.
body, changes in, 393.
clothing necessary for, 59.
fair or dark, 26.
fleshy or spare, 26.
injurious effects to, 344.
large or small, 26.
large, fair, or dark, 26.
mature care of, 58.
small and fair or dark, 26.
starved at breasts, 83.
still-born, care of, 53.
premature care of, 55.
proportion to parents, 27.
Infantile, food most, 126.
Inflammation of the bowels, 269.
of the brain, 338.
of the colon, 272.
of the ears, 359.
of the eyes, 355.
of the lungs, 321.
of the mouth, 218.
of the pleura, 323.
of the stomach, 244, 247.
Intertrigo (chafing), 368.
Itch, 375.

J

Jaundice, 254.

L

Laryngismus stridulous (spasm of the throat), 318.
Laryngitis, acute (hoarseness), 318.
Legache, 408.
Leucorrhœa, infantile (white flow), 299.
Location effects on infant, 27.
Lousiness, 375.
Lungs, glandular obstruction in, 285.
inflammation of, 321.

M

Management, maternal, before birth, 42.
of new-born, 51.
if alone, 51.
Marasmus, 263, 283.
Mare's milk, 96.
Masturbation, 299.
Maternal feeding of infant, 61.
impressions, 38.
management before birth, 42.
Measles, 382.
vs. scarlet fever, 383.
French, 385.
German, 385.
Meningitis (inflammation of coverings of brain), 338.
tubercular, 339.
Method of carrying child, 402.
Chinese, 392.
Indian, 401.
Oriental, 401.
Welsh, 401.
of lifting, 398.
Milk, sweet almond, 104.
animal and human, 93.
artificial, 103.
choice of, 92.
condensed, 101.
crust, 370.
effected by food, 65.
effected by habits, 64.
effected by temperament, 62.

Milk food to substitute breast, 89.
habits of mother, effect, 79.
how digested, 97.
made like human, 93.
maternal and changes, 61.
of fleshy women, 65.
of spare women, 66.
supply, how to increase, 74.
Model dress for infant, 395.
dress for child, 396.
Months, food for first six, 123.
for second six, 137.
for third six, 141.
for fourth six, 147.
Mothers, care of at labor, 53.
may have healthy children, 34.
management before birth, 42.
Morbus coxarius (hipjoint disease), 407.
Mouth in sickness, 203.
diseases of, 213.
sore, 218.
ulcerated, 322.
gangrenous, 223.
glands, 237.
Mumps, 238.
Muscles, uses and abuses, 409.
of back stiff, 409.
of neck stiff, 409.
Muscular deformity from disease, 415.
training, 416.

N

Nasal disorders, 301.
catarrh, 402.
bleeding, 306.
Nationality effects on child, 27.
causing disease, 173.
Navel, how to dress, 58.
ruptured, 253.
Neck, stiff, 409.
Nervous system and diseases, 344.
Nervousness, 343.
Nipples, care before labor, 49.
cap, 151.
Night terrors, 337.
Nose, growths in, 307.
foreign bodies in, 307.
boring in the, 307.
Nursed child, when to wean, 82.
partially, best food 85.
when first, 60.
Nursing apparatus, complete, 152.
Nettle rash, 369.
Nurse, careful better than poor breast, 88.
Nurses, wet, 75.
appearances of breasts, 76.
appearance of milk, 80.
change of habits, change milk, 79.
change of, often best, 77.
choice of, 75.
expedients to keep places, 81.
health of, 75.
personal appearance of, 75.
temper of, 76.
Nursing, time for, 80.
bottle, 151.
bottle, Russian, 151.
bottle, varieties, 151.
bottles, care needed, 158.
bottle, when to take away, 159.

O

Ophthalmia (sore eyes), 355.
neonatorum, 354.
Otitis (inflammation in the ear), 359.
Otorrhœa (running from the ear), 360.

P

Parent, infant proportion to, 27.
health effect children, 35.
Parasitic diseases of the skin, 273.
Paraphymosis, 300.
Palpitation, 329.
Paralysis (loss of motion or sensation), 350.
Predisposition towards disease, 175.
Pertussis (hooping cough), 325.
Preparations necessary, 49.
Prolapsus ani (falling of the bowel), 276.
Pigeon breast, 401, 406.
Piles, 332.
Pleurisy (inflammation of the pleura), 323.
Pneumonia (inflammation of the lungs), 321.
catarrhal, 321.
croupous, 322.
Polyuria (frequent urination), 298.
Phymosis, 299.
Pharyngitis (sore throat), 308.
Phthiriasis (lousiness), 375.

Q

Quinsy, 309.

R

Rash tooth, 367.
Red gum, 366.
Remedies, chief for children, 186.
directions for use, 189.
for external use, 184.
for children's ailments, 182.
how to select, 390.
more complete list of, 187.
Respiration in sickness, 206.
Rectum, fissure of, 277.
Rectum, stricture of, 287.
ulcer, 277.
Rheumatism, 408, 415.
Ribs effects of compression, 401.
Rickets, 406.
Roseola (scarlet rash), 389.
Rotheln, 385.
vs. measles, 386.
vs. scarlatina, 386.

S

Scabies, 375.
Scaldhead, 370.
Scalds and burns, 376.
Scarlatina (scarlet fever), 377.
Scarlet fever, 377.
anginose, 378.
fever and diphtheria, 378.
fever, malignant, 378.
fever, simple, 378.
fever sequale, 380.
Scarlet rash, 389.
Schools effect children, 178.
School life, deformities from, 411.
training body, 414.
Seasons, effect of, on children, 176.
Self-control, how to develop, 352.
Sex, before birth, 50.
growth of, 404.
Sheep milk, 96.
Shoulder, stoop, 411.
Sleeplessness, 336.
Sick children, food for, 140.
children, cause of, 162.
Sickness, prominent signs of, 191.
Skin diseases of, 365.
changes after birth,
Sleep, first, for infant, 60.
in sickness, 200.
Snuffles (cold in the head), 302.
Soil effects on children, 163.
Soreness of infants, 368.
Soup, bread, 110.
milk, 110.
vegetable, 110, 119.

Spasm, general, 344.
of the throat, 318.
Spasmodic croup, 315.
Spine, curvature of, 409.
Sprains, 415.
Squinting, 359.
Stomach, catarrh of, 241.
disorders of, 240.
inflammation of, 244.
large in healthy child, 24.
Strabismus, (squinting), 359.
Starved infants at the breast, 83.
Stools in sickness, 209.
St. Vitus Dance, 351.
Stye, 358.
Strophulus (red gum), 366.
Summer, dread of weaning in, 91.
second, food during, 144.
when to watch child in, 144.
Summer complaint, 261.
Sun burn, 370.
Sunstroke, 342.
Surface in sickness, 204.
Swaddling bands, bad effects of 395.
Swellings of the head, 366.
of the breasts, 367.
Syringe, fountain, 152, 278.

T

Tabes mesenterica (consumption of the bowels), 283.
Tænia solium, 279.
Talking, defective, 411.
Teeth, care of, 234.
first appearance of, 225.
second, 226.
difficult cutting, 227.
decay of, 232.
powder, 235.
Teething ring, 152, 288.
Temperament effect on child, 27.
Temperature in sickness, 204.
Tenia decalvans, 374.
favosa, 374.
tonsurans, 374.
versicolor, 374.
Terrors, night, 337.
Toothache, 236.
rash, 367.
Throat, diseases of, 308.
paralysis, 313.
sore, 308.
Thumb sucking, 410.
Thrush, 218.
Tongue, symptoms of, 213.
tie, 217.
swollen, 218.
Tonsillitis (inflammation of the tonsils), 286, 309.
Tonsils, enlargement of the,
Training muscles, 416.
Trismus (spasm of the jaw), 345.
Tumors of the eye, 357.
of the head, 366.
Tussis (cough), 324.
Typhoid fever, 287.

U

Urinary organs and diseases, 293.
Urinary organs, abuse of, 299.
Urine in sickness, 210.
suppression of, 293.
retention of, 294.
incontinence of the, 295.
Urination, painful, 297.
frequent, 298.
Urticaria (hives), 369.

V

Vaccination,
Varicella (chicken-pox), 387.
vs. variola, 387.
vs. varioloid, 387.
Varicose veins, 332.
Variola (small-pox), 388.
Varioloid (mild small-pox),
Vegetable soup, 110.

Voice and its management, 319.
Vomiting in sickness, 209.

W

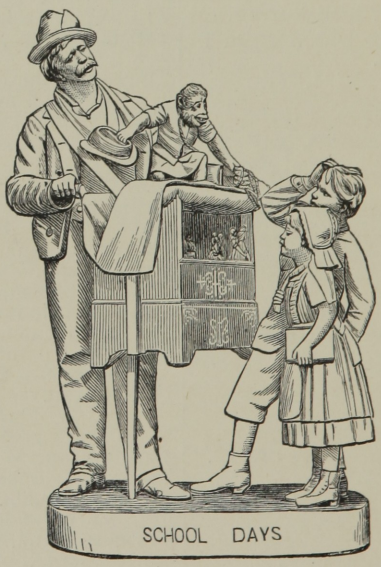
Walk, awkward, 411.
Warts, 389.
Water on the brain, 340.
about the heart, 331.
in the chest, 323.
Weaning, best time to, 144.
from bottle, 159,
from wet nurse, 82.
unnecessary dread of, 91.
Weak eyes, 356.
Weight of body of infant, 404.
of body of boy, 405.
Weight of body of child, 404.
of body of girl, 405.
difference in sex, 404.
Winking, 356.
Whey, milk, how made, 90.
Worms, pin, 278.
round, 279.
tape, 279.
thread, 278.

Y

Year, food for one, 137.
food for two, 145, 147.

Z

Zweiback, 117.



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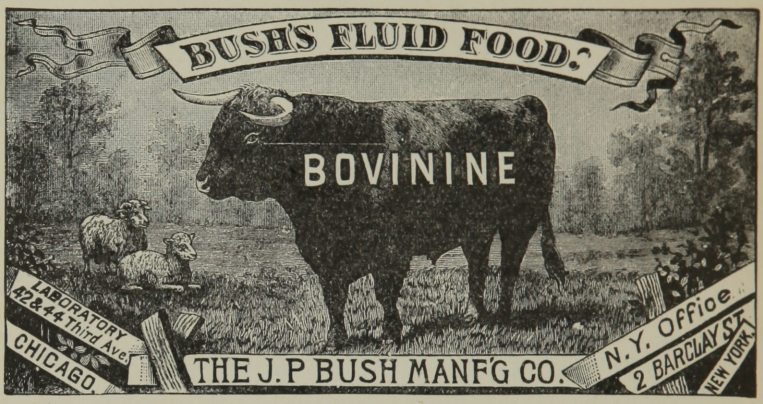

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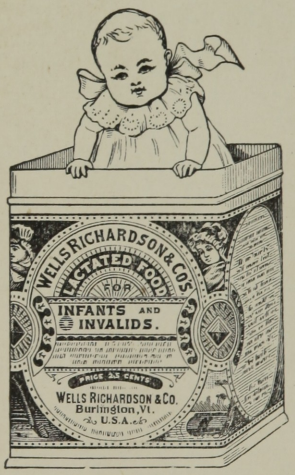

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