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# RACE CULTURE;

## MOTHER AND CHILD

BY  
SUSANNA WAY DODDS, A. M., M. D.

Author of  
"HEALTH IN THE HOUSEHOLD," "THE REASON WHY," ETC.

*An Enlightened Motherhood with Physical  
Regeneration, will Save the Race.*

THE HEALTH-CULTURE COMPANY  
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## PREFACE

The leading object to which our nation seems to be devoting itself, is financial success. But what is the price we are paying for it? We are growing more and more unsound physically; and if this is kept up, no amount of wealth can save us from destruction.

A large per cent. of the people to-day, are anything are lacking in bodily vigor; nervous wrecks, many of them. They fall a prey to disease in middle life, and die prematurely. Their offspring too are abnormally active, precocious; more like little old men and women, than children that are healthy and robust.

The one thing we need above all others, is physical regeneration. Men under forty drop over with apoplexy; or they go to pieces with Bright's disease. Not a few die suddenly of heart failure; and of those who survive, many drag through years of invalidism. And yet, our country is said to be one of the healthiest on the globe. What then is the difficulty? Have we lost the art of preserving health? This is a question which ought to appeal strongly to every thinking man and woman.

Again, why is *motherhood* a thing to be dreaded? It

is because childbearing has become a menace to life and health; and scarcely any woman desires to imperil her existence, even for a child. The trouble is not in the parturient process as nature designed it, but in the abnormal conditions which are present.

The fact is, we have seriously transgressed the laws of physiology; set them at defiance, so to speak, and Nature is taking her revenge. Either we must find ways to *avoid* the tortures and risks of maternity, or the race itself is doomed. The prospective mother ought to be the happiest creature alive, with no fear of suffering, or of premature decay.

This book has been written with a special purpose in view. The object sought is not only to teach women the secret of health and happiness, but to point out how an enlightened motherhood will improve the race. The diseases from which women suffer, tend to disqualify them for this lofty mission. The question then arises, as to whether these physical ailments are *preventable*. Already it has been answered in the affirmative, and by the most intelligent physicians in the land.

Women can never do the work for which they were created, either in the home or elsewhere, until they have good sound bodies. The future mothers of the race should not only have intellectual and moral worth, but they should be fine specimens of physical vigor. Women who are sick, disabled, are in no condition to do good work. Vital resistance is at a low ebb; and they and their offspring are ready to become the victims of every morbid influence.

Will the men and women who read these paragraphs, respond heartily to the thoughts herein expressed? If so, they will find in the pages which follow, a welcome

*PREFACE*

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message. Special directions are given for securing health; and these are so simple and so rational, that any one who reads will understand.

SUSANNA W. DODDS.

St. Louis, Mo. April 1, 1910.

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# RACE CULTURE

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## CHAPTER I

### IMPROVEMENT OF THE RACE

The great American people seem to be studying everything else under the sun, except themselves. Invention, art, literature, commerce, navigation, agriculture, manufacture, politics, etc., all are receiving careful attention. But the human body, that wonderful piece of vital machinery upon which the success of all our efforts depends, is sadly neglected. We know the names of the various organs, and where they are located: also, in a general way, the character of their functions. But when it comes to looking into the *needs* of the vital organism and providing for them, what is being done? We are neither enjoying good health, nor striving to improve it; nor are we making any great effort to lengthen human life. We are more interested in what we term getting on in the world, than we are in making ourselves acquainted with the laws of health.

The object of this book, is to create an interest in health culture; also to give some practical hints in regard to the *prevention* of disease, and the improvement of the race. It is one thing to study the abnormal manifestations in the human body; it is quite another, to point out ways of improving the race as a whole, so that diseases and abnormalities will cease to exist. It is hardly to the credit of our modern civilization, that

physical ailments have not only multiplied among all classes of people, but are every day becoming more complicated.

If one half the time and talent now employed in caring for and treating the sick, were devoted to the mental and physical improvement of our people, vast strides would be made in the uplifting of the race. Physicians especially make a great mistake, when they spend their time chiefly in "doctoring effects," rather than in the removal of the *causes* of disease. It should be the highest aim of the physician, to teach people how to *take care of themselves*.

But to raise the standard of manhood and womanhood, intellectually, morally and physically, we must better the environment of the individual. Was it Oliver Wendell Holmes who said, that to produce a perfect man or woman, we must go back a hundred years? Since, however, this is impossible, suppose we begin with the present generation. First of all, in the matter of offspring, the child itself should be *desired* by both father and mother. If, on the contrary, the little stranger enters the world as an unwelcome guest, it is cursed before it is born; the feelings of the parents will be impressed upon the child, and its organization shaped accordingly. Instead of being joyous and happy, its heart gladdened by everything about it, the child's mental horizon will be shrouded in gloom.—I know a woman whose mother was greatly distressed because she was pregnant; and the daughter from birth was unhappy and despondent. After she grew to womanhood, she said she never saw a coffin without wishing she were in it. This individual was *not* the child of love; and her very life, from the cradle to the grave, was overshadowed. Many instances could be given, proving that the little one not

wanted by its parents, is mentally, if not physically, an abnormal creation.

The mother then who finds herself pregnant, ought to feel rejoiced; and the father, if he is a true parent, will do his share in making her happy. The environment of the mother, will have much to do in shaping the character of the new being. Moreover, to beget offspring that will make the world better for their having lived in it, both parents should, at the time of conception, be in as nearly perfect physical conditions as possible. Not only so, the *mental* faculties of each should be in a normal state of activity, in order that they may transmit to the child fine intellectual and moral qualities. Where this is not the case, the very worst results are liable to follow. Whole pages could be written, proving beyond the shadow of a doubt, that both the mental and moral makeup of the offspring is largely determined by the condition of the parents at the time that conception takes place. The late R. T. Trall, M. D., once related to his medical class, an instance in which exactly nine months after the marriage, an idiotic child was born. At the wedding, *wine* was freely served, and both the bride and groom became intoxicated—which was regarded as a joke among the guests. No doubt many an idiot has been produced in the same way, the parents being under the influence of liquor when the child was conceived. Some very striking instances are on record, showing how the offspring is often so cursed by the parents.

In a similar way, a race of *criminals* may be propagated. This, too, has been proven, by those who have written upon and discussed the subject of heredity. As a human being is made, so is he; the parents are largely responsible for the characters of their children.—Just here, a word should be added in regard to the marriage

of relatives. Perhaps no family is so perfect that we may not find a blemish in some of its members. Either there is a physical defect of one sort or another, or the mental and moral development is not what it should be. Now, when cousins marry, and especially first cousins, whatever defect may exist in the two families, is liable to be duplicated or emphasized in the children born to such parents. There is quite a good deal of testimony on this point. In the royal households of Europe, where intermarriage among the kinspeople has been the rule, defects are particularly noticeable; physical and mental deficiencies are perpetuated in the offspring.

It must be said in this connection, however, that where the parties united in marriage are quite dissimilar, both in their mental and physical organizations, there is less danger of the defects here spoken of. But if the two are very much alike, there will almost certainly be a blemish in their progeny; sometimes it is a defect in hearing, and one or more of the children may be deaf and dumb. Or perhaps the eyesight is defective, and cataract or other disease develops. Moreover, too great a similarity in the mental and physical makeup of the parents, even where they are not related, might lead to defects in their offspring. It would seem, therefore, that a certain degree of *contrast* is necessary, in order to produce a well-rounded-out organization. Though if the contrasts are too great in the husband and wife there is often a lack of harmony between them, and unfavorable results may show themselves in the children.

It is thought by many, that the influence of the mother over the unborn child is greater than that of the father; and there are some excellent reasons for this belief. At the time of conception or before it, the influence of the two parents is probably about equal; either one may

be so impressed mentally or physically by a particular environment, that certain traits are transmitted to the new being. But aside from that, the mother is more intimately related to it through the whole nine months of gestation. Hence the need of making her surroundings as pleasant as possible during that period. It is also necessary that both mind and body should be normally active, if she would transmit to the child her best qualities. The prospective mother who is unoccupied, living at her ease, is not likely to give birth to an ambitious son or daughter; and she may have herself to blame, if the child is next to incompetent—mentally and physically lazy. The woman who is pregnant, should so order her life that it will be active, rather than strenuous; *normal* activity of both mind and body, is the thing needed. With a proper environment the woman ought to enjoy everything that she does, and be happy in her work.

To become the mothers of a hardy and intellectual race, one that is worth preserving, women must live right and do right; when they have good sound bodies, and not till then, will they be capable of bearing a healthy offspring. The fathers too should be strong and well—not the victims of tobacco, alcohol, and an appetite for foods that will make the blood impure, and their bodies gross and sensual. Purity of life, in eating, drinking, and everything else, is next to indispensable in the improvement of the race.

There is another very important feature of this subject, upon which not a word has yet been said. If parents would transmit to their children a fine organization, their *sexual* relations should be above reproach. How can a father have a son or daughter that is naturally pure and chaste, if his own life has not been

correct before that child was conceived? I could describe a case, in which a young woman born of respectable parents was so strongly inclined to sexual impurity, that neither father nor mother could do anything with her. She would leave home on every opportunity, and go straight to a house of assignation. Whatever became of her, I do not know; but she caused her family an endless amount of trouble. In what way the parents had sinned, or how grievously, was not a matter to lay before the public. Of one thing we are sure: there is no effect without a cause. Enough is known about the laws of heredity, to warrant the belief that sexual purity in the father and mother will impress itself upon the characters of their children. .

## CHAPTER II

### FROM CHILDHOOD TO MATURITY

The training and development of a human being, implies a great deal more than can be said in a single chapter. The little spark of life which we call the soul, can only manifest itself through a physical organization; and unless the latter is developed in accordance with certain known laws, the individual may be a monstrosity. Indeed, it is the exception to meet with a perfect organization, a well-rounded-out man or woman. Hence the importance of looking well to the needs of the body; its careful training should be commenced in early childhood, continued to maturity, and not neglected either in middle life or old age.

It is just here that some very serious mistakes have been committed. In the new-born infant, and up to the time it is weaned, little if any distinction is made between the two sexes; the boy and girl are clothed alike, fed alike, and for the most part trained alike. Even after the child is two or three years old, its garments are so fashioned that the body is covered evenly, or nearly so. There is the same freedom of muscle and limb, and the circulation of the blood is not interfered with in any part. Were this rule observed in the *after* management, the two children might be equally developed in bone, muscle, and functional activity; there would be the same breathing power, with full expan-

sion of chest, and an equal development of the digestive organs. Active exercises would strengthen every part, and the boys and girls would grow up healthy and strong together [www.libtool.com.cn](http://www.libtool.com.cn)

But how is it in actual fact? The little girl is very soon managed differently. She is dressed in such a way as to show her pretty plump arms and tapering legs. A number of gathered and fluffy skirts are fastened about the waist line, overheating and congesting the hips; the blood is not distributed equally to every portion of the body. Thin shoes and stockings cover the feet, often in the coldest weather, while the trunk is enveloped in warm flannels; so that the blood is forced away from the extremities, and the bloodvessels in the pelvic organs are filled to repletion.

Even at a tender age, the garments that are made for the daughter are unphysiological; they are not in accordance with the needs of the system. As a general thing, they are made for show rather than utility. Her little brother is dressed more sensibly; his clothes are designed for comfort and use; they are so fashioned that almost *no restraint* is forced upon the muscles and limbs. Not so with the girl. Dangling skirts are in her way, and obstruct her movements; if she tries to climb a fence or run through the woods, she is left behind. The boy and the dog can get on faster; and the *next* time she starts out with her brother, he tells her she can't play with him; that she cannot run as fast; and, in fact, that she is "only a girl," and should play with other girls. Many a hearty cry these little sisters have had, because they were not able to keep up with their brothers. In the punishments for misdemeanors, a difference is sometimes made. I once heard a little boy beg his mother not to whip his sister, although she had



been naughty. He said, "Ma, don't whip her; she is nothin' but a dirl." Because of this fact, he thought her less responsible. It is altogether wrong, not to allow the girl the same physical freedom that is given to the boy. I knew an Irish gentleman who came to this country with his wife and two little girls. The older child and the mother died of diphtheria; and he was exceedingly anxious to raise the other one, though she was rather delicate. Recognizing the disabilities imposed upon women and girls on account of their dress, he decided to clothe his little daughter in such a way that she could live and play out of doors without being hampered by skirts. He therefore dressed her like a boy, in trousers and roundabout. So robed she could play with any boy in the neighborhood, even in rough weather. He also provided her with a governess, who not only taught her from books, and fed her correctly, but looked after her physical welfare generally. The father was rewarded by seeing his daughter grow up to womanhood strong and healthy; and a more modest little maiden was not to be seen in the neighborhood. She continued to wear her "trousers" till she was eight or ten years old.

The distinctions in dress that are usually made between the sexes, are carried out in the home, in the schoolroom, and everywhere in society. Nor is the distinction always confined to dress. In many families the little girls are pampered, petted and spoiled; and they suffer with indigestion, not merely from bad feeding, but through lack of *exercise* in the open air and sunshine. Their muscles are not well developed; and as the young girl approaches maturity, other and still more radical changes are made in her dress. Before she is hardly grown, that hideous and torturing instrument,

the corset, with bones where no bones should be, is clasped about her waist. She must dress as *other* girls do; and have her "*figure*" deformed as other girls have theirs. So that before she is twenty, the intercostal muscles concerned in respiration are subparalyzed, and full breathing is impossible. The liver is crowded out of place, and fails to perform its function properly. The stomach and bowels are sagged down, and constipation results; the abdominal contents press upon the pelvic organs, and force them out of place. The latter become congested, and menstrual derangements are sure to follow. Many a young girl, almost before she reaches her teens, has laid the foundation for uterine and other pelvic diseases. Because of congested organs she suffers at her monthly periods from severe hemorrhages, all of which is unnatural and weakening.

Is this the way to prepare the young women of our land for wifehood and motherhood; or for any sphere of usefulness? The boy in the meantime is developing himself physically; exercises of various kinds which tend to strengthen the muscles and increase the breathing power, are specially recommended to him. He is not likely to fall a prey to disease before he has reached manhood—*unless* he should become the victim of tobacco and die of heartfailure, or take to some other bad habit that may end his days prematurely.

Pray, where are our health boards; our physicians; or schools for physical culture? Shall we NEVER wake up to the situation, and plead for reforms in physical training? The stress of business in the divorce courts, is not *all* of it due to faults on the part of the husband. He has his share of defects, no doubt, but they are not confined to him. What young man wants a sickly wife, doctors' bills innumerable to pay, and an untrained

servant girl in the kitchen, preparing food that would give anybody dyspepsia? Often the case would not be so bad, if the husband could roll up his sleeves and cook his own meals, when the wife is temporarily ill. But as a rule, this part of a young man's education is sadly neglected by his fond and doting mother. Boys (in some families at least) are not supposed to know anything in regard to preparing a meal, waiting on the sick, or doing little chores about the house. These things are left to the sisters, or to the hired girl.

We ought to be able to see with half an eye, that many of the troubles met with in early married life are the direct results of unphysiological training, not only in childhood, but in girlhood and womanhood. Some mothers too have an idea that *their* daughters must never do hard work; consequently they are brought up in comparative idleness. The mother takes the lead, in all household duties, and her daughter grows up with very little knowledge of domestic science; she can neither cook, wash, iron, scrub the floor, nor do anything else that the hired help is supposed to do. The result is, that when this daughter has a house of her own to look after, children too perhaps, she is utterly helpless, incompetent; and the girl in the kitchen can take any advantage of her that she pleases—because forsooth, her mistress “does not know anything.”

Not until the *physical* welfare of our daughters is properly looked after, will the young wife and mother be competent to superintend, direct and govern the home; and the time to *begin* this work is in early childhood. Our modern civilization, even at its best, is anything but ideal in character. The aim of every parent should be to give to the world the *highest types* of men and women, each possessing a sound mind in a sound

body. To secure this end, the early training of the two sexes should be practically the same. Every child, whether male or female, should be clothed in such a way as to avoid restraint in any part of the body, so that each muscle and limb can perform its legitimate function. There should be the fullest capacity in the lungs, and perfect breathing power. Without this, a fine physical development is impossible. The young girl as at present habited, cannot expand her lungs fully; the quality of the blood is impaired, the digestion weakened; and with the corset and other contrivances about the waist line, important organs are crowded out of place; large bloodvessels are pressed upon, and the pelvic organs are congested. Habitual headaches are common, as a result of this congestion.

A great deal has been written of late years, in regard to overtaxing our girls in the schoolroom, giving them too many hard studies, &c. But not a word is said about their unphysiological habits; the snug dressing, the wearing of corsets, or heavy dragging skirts resting on the hips, the thin shoes or slippers—not to mention high heels which weaken the spine, close-fitting collars producing laryngeal affections, etc., etc. The trouble is not generally with the curriculum; it lies much deeper. The *causes* of the ailments with which these girls suffer, are indeed manifold; they are neither fed nor clothed in accordance with physiological requirements; the long and heavy skirts which it is thought proper that a girl should wear after she has reached a certain age, have a tendency to keep her indoors when she ought to be out in the open air and sunshine. Often too the schoolroom is hot and stuffy, which is bad for both boys and girls. I sometimes think that if teachers and professors paid as much attention to *thorough ventilation*

as they do to imparting knowledge on other subjects, the school life of our boys and girls would be very different from what it is. Moreover, there would not be so many deaths from tuberculosis before the college course is finished, or soon thereafter. The atmosphere in some of our school buildings and colleges, is nothing short of a disgrace to our so-called higher education. The very first principles of good sound health, are ignored. True, the young men in our colleges and schools counteract, to some extent, the baneful influences that are met with in the classroom. But what about the young women who are pursuing a course of study? Is the same care taken to develop *them* physically, and to fit them for their duties in after life?

Never shall we secure for our young women that robust health which lies at the foundation of all success in life, until we have radically changed the manner of their bringing-up. We know how to train and develop fine horses for the race course; they are properly fed and groomed, and are given the kind of exercise which will make them strong and active. We must in like manner so train and educate our young girls, even into womanhood, that failing health will be next to impossible. As things are at the present time, good health is the exception, not the rule. The girl is scarcely grown, until there are menstrual and other disorders. Often she is in the doctor's hands; and after marriage, she is in no way fitted for the responsibilities that await her. In the higher walks of life, the condition is even worse. So true is this, that the prospective mother is filled with dread, lest in bearing a child she will not only suffer physical torture, but her very life will be endangered. It is indeed a jest in our medical societies, that women, instead of being strong and

healthy, the robust mothers of a hardy race, have become "the chief support of the doctors."

In a more advanced civilization, one in which the physical welfare of the individual is provided for, both the men and women of our country will be a credit to the means employed in securing good health. The sickness and suffering now so commonly met with, is the result of broken law; we have not lived in such a way as to avoid the causes of disease. There is no doubt that much of the incompatibility in families, is due, to a great extent, to sickness and ill health. It is the inherent *right* of every human being, not only to be well born, but to be brought up in such a way as to secure a legacy of health and strength.

Another thing to which every child is entitled, is to be trained to some calling or occupation by which he or she can earn a livelihood, and become self-supporting. There is much sorrow in the world because no such training has been given. The man or woman who is capable of self-support, will not be at the mercy of every caprice of fortune; this is especially true, if the individual has good health. Every mother's son and daughter, should stand on an equal footing in this respect. Even among the eminently well-to-do, there is need of such training; no amount of wealth can insure the individual against possible misfortune and loss of income. The inclination or bent of every child should be carefully studied, and the means employed to train or educate it accordingly. No one (in this country certainly) is so well provided for, that poverty may not overtake him; and sooner or later, the man or woman of wealth may become very poor.

A prominent cause of incompatibility and unhappiness in the home, is the separation of the sexes as they

approach maturity; though the hint to do otherwise is broad enough, when we consider that boys and girls are born into the same family. When properly educated they will develop side by side, with no mark of inferiority between them. The girls will be trained in athletic sports, and made to feel their physical power as human beings. They will no longer be weaklings, for somebody else to care for and protect. Boys and girls should play together; this will make the girls stronger and more self-reliant, and the boys more gentle and humane, even in their outdoor sports and games. In helping about the house, every mother should see to it, that her children of both sexes are trained to do practically the same work; and if a member of the family is sick or disabled, it should be the duty and pleasure of every child to lend a hand. Such training will come greatly into play in after life, when these children have homes of their own.

The father and mother should also provide employment for their children outside of the house, planting trees and shrubs, beautifying the grounds, making garden, and doing work of various kinds as needed. It has been said, that *widow's sons* usually make the best husbands. The reason is obvious; as a general thing, these sons have been put to all kinds of work, in and about the house, and have assisted and relieved their mothers in every way possible. The lack of this kind of training, is sometimes a great drawback to a young married man; he has never had to care specially for his mother or sisters, and often he looks upon such helpfulness as "out of his sphere." He is willing to hire the work done, but has no inclination to take hold and assist in it. Such disposition on the part of the "head of the house," is not always conducive to domestic

happiness; neither is the example set to the children, just what it ought to be, and this too makes the mother's task still harder. In some of the old countries, it is the custom for the mother (perhaps with a numerous family) to black the shoes on Saturday night for all the members of the household. The thought seems never to have occurred to these mothers, that their work would be very much lightened by a division of labor.

In every well-ordered household, there should be as far as possible a *community of interest*; and every member of the family should strive to strengthen the bond of union which ought to exist. For this reason, the sexes ought not to be *separated*, either during childhood or youth. From the time they begin to develop mentally and physically (which is from their very birth), the boys and girls should associate together; it is only in this way that they can thoroughly understand each other. And as they approach manhood and womanhood they should grow *nearer together*, not further apart. How can a young man understand the needs of the other sex, whether as sister, wife or daughter, if he has been trained and educated away from it? Or how can a wife know the needs of her husband, if she has not kept pace with him (and with her brothers), during the years in which they were *growing* mentally and physically? Not a few of the misunderstandings that take place between husband and wife, are owing to the fact that men and women are not educated side by side. The male colleges and the female seminaries, are to a certain extent the hot-beds of sentiments and emotions which should be *foreign* to every young man and woman. Human nature unperverted, is the product of *mutual* relations and associations in the home and elsewhere.



By and by, when we have reached a higher degree of civilization, we shall recognize these great fundamental principles, and be guided by them. There should in every stage of human life be the utmost freedom between the sexes, with the least possible hint of impropriety. Each should be taught to understand and respect the other, in the home, in the schoolroom, and in society. Why is it that the peasantry of Europe (not to say other countries) usually live so harmoniously together in the home? It is because the different members of the family have not been separated in their early bringing up, nor afterward except upon the direst necessity. It is only when poverty and starvation are staring them in the face, that the sons are sent to distant lands and the daughters put out to service.

The most perfect race of human beings, will be one in which men and women approximate nearer to each other intellectually, as they come to maturity. In the matter of education, our aim should be to secure *symmetrical* development; not to cultivate one set of faculties at the expense of others. The intellectual and social traits should as far as possible be developed at the same time. Human nature is exceedingly complex; and an education to be complete, must take into account every part of the individual, whether of mind or body. Quite a good deal has been done along these lines, in some of our schools and colleges; but there is room for still greater improvement.

In educating a child, the object sought, both by the parents and teachers, should be to make of that individual the highest type of man or woman which can be produced. There has been much needless concern, lest in giving to a girl a thorough education, such as

our best colleges offer, she will become less feminine in character. There is, however, not the slightest danger of this; no matter to what extent the woman is developed, either mentally or physically, she will remain a woman still. Nature looks carefully after these things, not merely in the birth but in the after development of her children.

The great defect in nearly all our systems of education, is that neither men nor women are trained in such a way that the knowledge acquired will be an aid, rather than a hindrance in performing the duties of everyday life. It has indeed been stated, that a college education rather unfits a young man for practical business. And it certainly is true that the so-called training in most of our schools for young girls, does not by any means prepare them for the responsibilities of home-making.

Every young woman should be carefully trained in housewifery; she ought to know how to cook, wash, iron, make her own clothes and keep them in order, take care of the sick, and do those hundred and one little things which usually devolve upon the wife and mother. Not to be so qualified, places her at a great disadvantage, when she comes to take up the serious duties of life. The young man too, who is thoroughly familiar with all the lines of domestic work, will find it wonderfully convenient when he has a home of his own; and the very best time for young people to acquire such knowledge, is while they are growing up.

The ideal education of youth, is that which will enable the individual to make the most of himself, whatever his pursuit in life may be. It will give to him not only a knowledge of science, art, literature, mathematics, history, etc. (the branches usually taught

in colleges), but he will be made thoroughly acquainted with his own body and its functions. A knowledge of the principles of physiology and their practical application, would be far more essential to the young man or woman who is starting out in life, than the most intimate acquaintance with Latin and Greek, or conic sections and other branches of the higher mathematics. To "know thyself," is of the highest importance to every human being. The principles and practice of hygiene, sanitation, and all those kindred subjects which pertain to our physical welfare,—*these* are the things which will carry us safely through; for whatever success we make in life, will depend upon our having *good sound health*. Without this, we can neither plan nor execute.

## CHAPTER III

### THE MARRIAGE RELATION

The subject embraced in the above title, is one about which not enough has been said or written; and even in communities the most civilized and enlightened, this whole theme is far from being properly understood. Like every other relation in life, that of marriage should be carefully studied, and viewed from all standpoints. One of the first things to decide, is whether the contracting parties are suited to each other; and this cannot be determined by a mere casual meeting or superficial acquaintance of the individuals. Such an acquaintance if followed by marriage, will, ten chances to one, be fraught with peril. In a union so intimate and sacred, every means should be employed to ascertain whether the mental and physical makeup of the man and woman is of a kind that will produce harmony; the parties should so supplement each other at every step, that happiness will result.

But how is all this to be brought about? Not by playing at a game of chance; nor by associating together beforehand as young people so often do at the present time. Each is put upon his or her good behavior on special occasions, this being accompanied by a *self-consciousness* which is anything but spontaneous and natural. As already hinted in the last chapter, the acquaintance should begin casually, and without any

thought of marriage. The young people and their associates should have frequent opportunities of mingling together, and if possible *working* together, in the same or similar occupations. If the work is difficult, such as will tax the energies to the utmost, try the patience, and ruffle the temper it may be, all the better; it will give the young people a chance to get well acquainted with each other, much as children do on the playground. After continued association, they will by and by find out whether there is congeniality between them; and whether they could live harmoniously together in after life. Some of the happiest marriages the writer has ever known, were where the individuals had studied together in the classroom, graduated from the same institution, and taught school together for a number of years before marriage. This gave each an opportunity to learn the other's character, and to discover whether they were really made for each other. Very happy marriages have also resulted, where the two have lived next-door neighbors during their childhood and youth.

In society as we have it to-day, not sufficient opportunity is given for the young people to meet together on a common footing, and discuss subjects of all kinds with the utmost freedom. In a natural and wholesome state of society prudery will cease to exist, and chaperones will not be needed. Parents and children, uncles and aunts, cousins and friends, all will come together in family and neighborhood groups, and without any thought of sexual attraction; the young people will be drawn together because of their intellectual attainments, their social likes and dislikes, or by a similarity in their occupations and aspirations. Through such acquaintance, it will be an easy matter to find out the

principles, the religious views, &c., of each individual; and mutual attachments will spring up of their own accord. Human nature is the best judge in matters of this kind. But as young people come together at the present time and a hasty marriage takes place, the particular makeup of the individual is too often an unknown quantity; disagreements follow, and mutual antagonisms. Very soon each loses respect for the other; and as there are no abiding principles to bind the two parties together, a separation is the inevitable result. If there are children, this makes the case still worse.

Another thing of vital importance, and which is almost never put into practice, is for the two people contemplating marriage to put themselves on probation as it were; each should find out whether the other entertains similar views in regard to marriage. If this is not done, it may be less than a fortnight after the ceremony is said, before one or both parties will make the discovery that there is no love between them, and that they are not at all adapted to each other. Perhaps the husband is sexually diseased; if so, that fact should be ascertained before actual marriage takes place. When we become thoroughly civilized in this respect, the parents of the intended bride will see to it that their daughter takes no risk in the selection of a husband; nor will the latter consider it a hardship to give every assurance that he is physically sound. The certificate of a physician in good standing, should attest that fact. Many a wife has been made miserable, and led a life of suffering and invalidism, because her husband was sexually diseased, and she very soon became so.

Again, there is such a thing as *chastity* in married life; temperance, if you please. But many a woman

rushes into marriage without knowing anything on this subject; and just here is where some of the most serious mistakes are made. One would suppose that if there was anything in this world to which a human being has a right, it is to her own body; and that on no account should it be prostituted in the marriage relation. Many are the disagreements, the mental and physical tortures, and the trials in the divorce courts, because forsooth there was no mutual *understanding* on this point before marriage. Hence the urgent necessity of the parties finding out before it is too late, whether they agree as regards the sexual relation. If the wife finds that her husband is so thoroughly selfish that his own pleasure is paramount to her physical comfort and welfare, she will not only lose respect for him, but will come to despise him. Moreover, the children that are born to such parents, will either be lacking in the love element of their natures, or be abnormally developed. Indeed, where the sexual relation is not harmonious between husband and wife, the result is usually seen in the offspring.

It is therefore right and proper that a couple who contemplate marriage, should very decidedly understand each other in regard to these matters, before they are engaged; it is through the lack of such an understanding, that disagreements and conjugal infelicities arise. We have abundant proof of this at the present time, and in all walks of life, from the highest to the lowest.—True, there is sometimes an outward appearance of domestic happiness in families, owing to the fact that in many households the husband and wife are *one*, and that one is the man. Rather let us have quarrels and dissensions, than *destruction* of the wife's individuality.

Suppose we look at this subject from a physiological standpoint. Every organ in our bodies is made for use—not abuse. For example, take the digestive organs; the gratification of appetite, normally indulged, is legitimate. We partake of food, and after a certain length of time the nutriment derived from it is appropriated, and we experience hunger. This is a hint that we should eat again; and when the needs of the vital economy are supplied, hunger returns. But if we take our meals at irregular intervals, or eat before we are hungry, we shall derange the digestive organs; so that by and by the natural instinct of hunger becomes so perverted, that it ceases to be a reliable guide.—The same is true of the sexual appetite; we can so pervert it, that the instincts are not to be relied on; sexual excesses follow, and often the appetite (on the part of the wife certainly) is in a measure destroyed. The writer has frequently been asked, why it was that pleasure in this relation had ceased to exist. To answer the question properly, the whole subject needs to be studied physiologically.

The function of generation, at least in the female, is attended with certain rhythmical phenomena. The ovum is developed and thrown off from the Graafian follicle at stated intervals; and there is to a certain extent a congested state of the sexual organs, this being accompanied at times with what is termed sexual desire. At *such* times, the sexual act is natural, and pleasure results from it. But after the ovum has been expelled from the genital tract, there is a period of repose; the congested state of the organs subsides, and the sexual appetite is in abeyance. This periodicity takes place (or should take place) regularly, every month. But if natural law is not observed in the



relation of the sexes, the function becomes perverted; and sexual desire may occur abnormally, or not at all. Just as in eating; if food is not taken at stated intervals, or if it is indulged in to excess, the sensation of hunger cannot be relied on; it ceases to occur at proper times, or it is absent.

As regards the sexual appetite, there is scarcely an instinct or passion that can so easily be weakened or destroyed by an exhibition of force. To excite this appetite normally, a manifestation of love and tenderness is of the utmost importance. The husband, if true to his better self, will bear this fact in mind; not to do so, is to defeat the very end sought. Indeed, the man who intends to hold the love and esteem of his wife, will be most careful of her feelings in every particular; and he who is rash enough to approach his wife sexually, without doing it in such a way as to meet with a hearty response on her part, is really and truly guilty of a sin; he commits *rape*—not an act of love.

The family ties in many a household have been hopelessly severed, by disregard of the things here suggested. Not only so, the health of the wife is often utterly ruined; and all on account of brute domination, instead of love and respect. When these are lost, better separation a thousand times than to continue to live together. Such a relation is unchaste.

In our half-way civilized state, the relation of the sexes in marriage seems not to have been studied scientifically. Neither has the fact been recognized, that the pleasures which should attend this relation are in a measure forfeited, through the violation of physiological law. Even physicians scarcely seem to notice the abnormalities that exist, or to have taken any steps to eliminate them. The procreative instinct appears to have been

turned loose, without bit or curb, and the victims rush headlong to destruction. The habits of society are such, in eating, drinking, tobacco-using, etc., that the passions of most men are no longer under restraint or control. Even in the so-called higher walks of life, the relations that exist in some families are such as cannot be described on these pages; common decency, to say nothing of self-respect, is ignored. If ever there was a time in the stage of our civilization, when scientists and thinkers should take up this subject and go to the bottom of it, there is need of such investigation at the present day. The welfare of humanity demands it. Not until the relations in married life are in accordance with natural law, will the product of our civilization reach that high degree of perfection to which it should attain.

Really, there are so many phases of this subject, that one scarcely knows where to begin. Dr. John Cowan, some years ago, wrote a large work, in which he took the bold stand that sexual congress should be limited in its object to *procreation*; that for any other purpose, such an act was improper and unnatural. He claimed that the lower animals, and especially the higher orders of them, could set us a wholesome example in this respect; that among them copulation had but the one object in view, which was the perpetuation of the species; and that if the female were pregnant, there was no violation of her person by the male. Moreover, while the mother nursed her young, there was no indulgence in the sexual act. This surely would be a good rule among human beings. Indeed, so important is the function of generation, that no act of mere passion should be permitted to interfere with it.

The subject of race propagation, is one that naturally

forces itself upon all thinking people; and a point much discussed, is whether there should be a limit to the number of children born in a family, or whether it is the duty of every father and mother to bring into the world as many children as possible. There are very few intelligent people, who will approve of the latter alternative. They believe most decidedly that it is better to have fewer children, and these of finer quality; that there are many parents who could raise and educate a number of children to advantage, say four or five, who would hardly be equal to the responsibility of bringing up two or three times that many.

Here then is an important question to decide; and if there is to be a limit in the number of offspring, who is to fix it? If Dr. Cowan's theory is correct, then the regulation of the number of children would be an easy matter; there would be no sexual act except for procreation. But if on the other hand, it is for another purpose than to beget offspring, this materially changes the relation between husband and wife. If the sexual act stimulates the love element in the two parties concerned, it would still be an open question, as to the degree of intimacy that should exist between them. Fortunately, the physical organization of the wife will help greatly in deciding that matter. It is only at certain times within the lunar month, that sexual congress is desirable; and it is during *this period* that conception is liable to take place. At other times (in a normal state of health certainly), there is no ovum to be impregnated; this is either in the formative stage in the ovary, or it has passed out through the genital tract.

It has been found by careful observation and experiment, that the sexual act resulting in impregnation

usually takes place either just *before* the menstrual flow occurs, or within eight or ten days after it has ceased. This at least is the rule, when the health of the woman is normal. Of course *during* the menstrual period, no sexual intimacy should be tolerated.

So much then is relatively settled. There are, however, other difficulties to contend with. If we followed the example of the lower animals (Dr. Cowan's rule), the solution of this vexed question would be comparatively simple; the parents having decided as to the number of offspring that they deemed desirable, would govern their acts accordingly. They would plan for the event beforehand, and make the environment such as would favor the proper development of the new being; and the little stranger when born, would not be unwelcome. But as things are at the present time, the wife never knows when she will be pregnant; and often she lives in a sort of dread, fearing that a child will be conceived and born under circumstances that are unfavorable. A large per cent. of human beings are so begotten and born. Is it any wonder then that so great a proportion of infants come into the world with low organizations, some of them idiotic? A child that is not wanted, is never what it should be; and often it is a source of much sorrow to its parents.

Surely there must be a way to secure better results, and the thing is to find it. Many husbands and wives are not fit to be parents. Suppose we eliminate this class, so far as the present discussion is concerned. What then? Of the number remaining, a large per cent. could not do justice to a *numerous* offspring; neither the financial nor the physical conditions are such as to recommend it. This being the case, we must decide how the limit to offspring is to be secured. If the

sexual act is not merely for procreation, but also (as some maintain) to strengthen the love element between husband and wife, then there should be a legitimate way (physiological of course) in which to avoid conception. But what is this way? Not a surgical operation, which would unsex either the woman or the man; not the use of drugs—which no hygienist would recommend; not ice-cold injections, which would shock the nervous system, and tend to injure health; nor *any* artificial means which would be obviously unnatural.

A method of prevention very commonly employed, is to limit the sexual act to the time in each lunar month, during which conception is thought to be impossible. Simple as this method may appear, it is, in the opinion of the writer, *thoroughly unphysiological*. In the first place, the woman whose generative organs are healthy, has no inclination to indige in the sexual act, except at the time in which she is liable to become pregnant, this being either just before the menstrual flux, or for some days afterward. At any other time, such intimacy if not actually repulsive, is distasteful. Another objection to this mode of prevention, is that its practice is apt to lead to disorders of the menstrual function; and the discharge of the ovum which ought to take place at a given time, occurs earlier or later. Consequently, the "time method" ceases to be a reliable preventive.

Well then, since there are objections to nearly or quite all of the methods proposed, we may have to come back to that which is recommended by Dr. Cowan; in other words, take lessons of the animals below us. If there are other and better ways of accomplishing the same end, a careful and honest inquiry on the part of our physicians ought to discover it.

So far as the sexual appetite is concerned, we have still a great deal to learn. There are many things that are liable to interfere with its manifestation. In the first place, the relative health and strength of the individual has much to do with it, as well as with the function of ovulation. A woman in feeble health, is in no condition to indulge sexually; and to try to force such an act upon her, is to outrage her sexual nature. If she has had a severe spell of sickness and is just recovering, the same rule holds good. Or if she is very tired, as from overwork, the sexual passion is in abeyance. Not only so, after a woman has passed the menopause, there is, relatively at least, a want of sexual appetite; or if it exists, it is because of *diseased conditions* in the generative organs. When these organs are congested, inflamed, because of disease, or owing to gross habits in eating and drinking, the sexual passion is more easily excited. I have heard it said too, that something like this occasionally takes place in the lower animals—the ones that have been domesticated. Improper feeding may pervert the instincts of any animal—just as it does in a human being.

It will be seen therefore, that the place to begin reformation sexually, is not merely in the married relation. The whole physical organism should be made *normal*; we must eat right, drink right, and otherwise conform to physiological requirements. The use of highly-seasoned foods, or gross foods of any kind, as in excessive meat eating, has a tendency to arouse the animal passions. If we would be pure, both in mind and body, we must live correctly. The whole system should be under law; and until this is the case our passions are likely to dominate the intellectual faculties.

A mistake often made in the married relation, is in

not trying to maintain the same degree of love and affection that existed before marriage. The young man who endeavors to win favor with the lady of his choice, usually has no difficulty in finding out the methods to be employed. He treats her with great respect, even with deference; and on no account will he offend her sense of propriety and good breeding. He tries in every way possible to win her esteem. Should he venture to criticise her, he will do it in the most careful manner—because he wants to hold her good opinion. Moreover, the same thing is true of the young woman who is forming an acquaintance with a view to marriage; she will do nothing to forfeit the love and respect of the young man she admires. Unfortunately, these excellent rules of good behavior are too often set aside after marriage has taken place; though if there are offspring, this has a tendency to cement the love and friendship of the parents. The little child is an angel, as it were, whose loving nature binds their hearts together, and endears them to each other.

To insure the love of either husband or wife, no pains should be spared in treating each other as *lovers still*. This alone would prevent many a heart-pang, not to say actual breach between them. Love that is worth having, must be founded upon respect; and to secure the latter, the same careful consideration is as necessary after marriage as before. Besides, if there are children, it is doubly important that the husband and wife treat each other not only with proper deference, but with affection. Little acts of kindness leave their impress; and those of an opposite nature do the same thing.

In the relation of husband and wife, there is room for an almost endless amount of tact on the part of

each; and if this is judiciously employed, either party can often be led, governed in fact, without knowing it. To carry a point, it is not always a wise thing to show even a suggestion of authority. A better plan by far, is to propose that a certain line of action might be the best; and to ask advice in regard to it, is often the quickest way to gain the desired end. We know the old saying, that it is easier to lead than to drive; this is true, not only in the government of unruly children, but in the management of a household. Many things can be brought about by reasoning together and seeming to defer to the other party, that no amount of force or insistence could accomplish.

An important rule therefore, for husband and wife, if they would live happily together, is not only for each to show respect for the other, but deference as to judgment. In other words, the same tactics should be employed, both before and after marriage; these two people should live near to each other, in all things.

As society is at present organized, there should be little room for controversy or dissention between the husband and wife; the proper sphere of each defines itself, in a large measure at least. The wife takes the lead in domestic matters, in and about the house, and the husband directs affairs outside. Each is supposed to be thoroughly qualified to conduct his or her special department; and if the helpmeet has been properly chosen, there will be no failure because of incompetency.

And yet, the sphere of each often laps over, so to speak; there are certain things that should claim the attention of both, and about which each should be consulted. For example, if there are children to be trained and educated, no important step should be taken without a consultation between the father and mother; and



where the two are properly mated, there will rarely be any serious disagreements. If either rules, as regards a particular point, it will be the one whose judgment is the best. Free discussion, and a proper regard for the opinions of each, will lead to a unity of decision. In such households, the "family government" will be founded upon mutual respect and love, combined with good sound judgment.

## CHAPTER IV

### CHASTITY IN MARRIED LIFE

As regards the sexual relation in married life, it may be stated that there are three distinct views which are held upon this subject.

FIRST.—That sexual intercourse is a physical *necessity*, and must therefore be provided for; though the so-called necessity, seems to apply to the man only. No advocate of this doctrine has gone so far as to say, that it applied to both sexes.

SECOND.—That the sexual act is a *love* relation; one that is mutually required and enjoyed by both parties.

THIRD.—That this relation should never be entered into, except for the purpose of *procreation*.

The object of this chapter, is not to prove or defend any one of the above propositions, but to discuss them from a physiological standpoint. It is the opinion of many writers, that no hard and fast rules can be applied to this subject; but that every true man and woman should ask himself or herself, "*What is right?*" The answer to this question will go far to demonstrate whether the individual is actuated by reason and common sense, by prejudice, or by selfishness.

Suppose we take up the first proposition. If it be true that *physiologically considered*, one-half the human race (the male portion of it) has the necessity here

spoken of, and the other half (the female portion) has it not, then what are we to do? It follows that monogamy cannot be defended; the male must be gratified, either *within* the married relation, or outside of it. Which horn of the dilemma shall we take? Shall we go over to polygamy? The spirit of our modern civilization (not to say Christianity) says no.

Well then, must we establish houses of prostitution, to satisfy the so-called needs of the male members of the genus homo? Surely no *Christian* man or woman can answer that question in the affirmative. Moreover, it is to be hoped that no highly civilized and enlightened individual would do so.—But what course is left to us? Here is the admitted “necessity”; and the only way out of the difficulty, so far as I am able to see it, is for every man to marry, and for his wife to become a *prostitute*—for her husband’s sake if you please.

It is a rule in logic, that when a given premise leads to a conclusion that is an obvious absurdity, it must be changed. In other words, it is not true. My old teacher in logic used to remark, that when a problem was given us, we should not rack our brains trying to find a solution, until we had first asked whether the proposition itself might not be false. Very good advice is this.

And now, since we are not prepared to advocate polygamy, nor houses of ill-fame, let us spring the question, whether in the nature of things the supposed necessity really exists. Some of our ablest and most distinguished writers and thinkers, declare that under strictly physiological conditions the sexual appetite does not run rampant. but is amenable to reason; further, that the impulse itself is only stimulated

when there are favoring conditions. These writers believe that it is gross *violation* of physiological law, which turns the appetites and passions loose upon society, making them dangerous and destructive. Take, for example, the crime of rape; in what *stratum* of civilized life does this usually occur? There can be but one answer; the crime prevails, for the most part certainly, among the very lowest classes of people. Like every other crime, it is fostered by ignorance, lack of early training, evil associations, gross physical indulgence, etc. The man who commits rape is very low down in the scale of civilization, and his habits are correspondingly bad. He is given to swearing; he drinks; he uses tobacco; he is uncleanly in his person; he sins in his dietic habits; he is foul-mouthed and quarrelsome; and sometimes he steals, and commits murder. The vices, as a general thing, hang closely together; though the man with unbridled passions and instincts, is not always guilty of the whole list of criminal offences.

The sexual appetite if uncontrollable, is not the exponent of a strictly *normal* individual; this person has sinned in other ways, perhaps long before his sexual nature was fully developed. Often too, it is the child who was *begotten* in sin, physiologically speaking, whose sexual passions run away with him. Sometimes this tendency is strongly marked in infancy; and the father of such a child may well ask the question, "Have I or my parents sinned, that this curse has come upon me?" Like every other transgression, perversion of the sexual instinct has a tendency to perpetuate itself; often by transmission from the parent to the child. Every son and daughter born, is a new creation; and according to all known laws, like begets like. If the parents are licentious in their habits of thought and

action, it stands to reason that the child will be similarly constituted.

Perhaps in no one particular, is there so gross a violation of physiological requirements between husband and wife, as during the nine months that the mother carries her child. We might learn a very instructive lesson from the lower animals, in regard to sexual relations during the period of gestation. As a rule, and particularly among those nobler animals which produce but one of their kind at a birth, the law of continence is strictly observed. Moreover, it is the *female* that rules in this regard; her system has an added function to perform in the creation of a new being. As soon as this fact is recognized by the prospective mother, no advances on the part of the male will be tolerated. Not only so, that individual is himself *obedient to law*; he leaves the female in the undisturbed possession of her rights from the time conception takes place. If the *human* animal were equally considerate, what a blessing it would be to all concerned. As things are at present the mother suffers (sometimes she miscarries), the child is outraged, and posterity is cursed.

It is indeed high time, that the thinkers among our people should take hold of this question, and treat it scientifically. Some few of our modern writers have given their testimony, and in language that cannot be mistaken. The so-called needs of the husband (and of men in general), are to a very large degree the result of unphysiological habits, especially in eating and drinking. These habits beget a foul condition of the blood, and a gross state of the tissues, including the organs of generation. This fact has been recognized by many physicians, and particularly among hygienists.

Dr. J. H. Kellogg, in an article on Chastity, states:

“From earliest infancy to impotent old age, under the perverting influence of civilization, there is a constant antagonism between diet and purity. When old enough to take food in the ordinary way, the infant’s tender organs of digestion are plied with highly-seasoned viands, stimulating sauces, animal foods, sweetmeats, and dainty tidbits in endless variety. Soon, tea and coffee are added to the list. Salt, pepper, ginger, mustard, condiments of every sort, deteriorate his daily food. If, perchance, he does not die at once of indigestion, or with his weakened forces fall a speedy victim to the diseases incident to infancy, he has his digestive organs impaired for life at the very outset of his existence.

“Exciting stimulents and condiments weaken and irritate his nerves, and derange the circulation. Thus, indirectly, they affect the sexual system, which suffers through sympathy with the other organs. But a more direct injury is done; flesh, condiments, eggs, tea, coffee, chocolate, and all other stimulants, have a powerful influence directly upon the reproductive organs. They increase the local supply of blood; and through nervous sympathy with the brain, the passions are aroused.

“Overeating, eating between meals, hasty eating, eating indigestible articles of food, and late suppers, react upon the sexual organs with the utmost certainty. Any disturbance of the digestive function deteriorates the quality of the blood. Poor blood, filled with crude, poorly digested food, is irritating to the nervous system, and especially to those extremely delicate nerves which govern the reproductive function. Irritation provokes congestion; congestion excites sexual desires; excited passions increase the local disturbance; and thus

each reacts upon the other, ever increasing the injury and the liability to future damage.

"Thus, these exciting causes continue their insidious work through youth and more mature years. Right under the eyes of fathers and mothers they work the ruin of their children, exciting such storms of passion as are absolutely uncontrollable.

"Few are aware of the influence upon morals exerted by that filthy habit, tobacco-using. When acquired early, it excites the undeveloped organs, arouses the passions, and in a few years converts the once chaste and pure youth into a vertiable volcano of lust, belching out from its inner fires of passion torrents of obscenity and the sulphurous fumes of lasciviousness. If long-continued, the final effect of tobacco is *emasculation*; but this is only the necessary consequence of super-excitations."—Among other causes which have a similar tendency, are idleness, evil associations, obscene literature, trashy novels, etc.

This writer further remarks: "Sexual wrong exists among the married, as well as the unmarried, and that within the pale of the marriage rite. Ignorant or regardless of the consequences, many married people give loose rein to their passions, supposing that the marriage vow removes all duty of restraint. Nature does not, however, forget to inflict upon the offenders commensurate punishment for their wrong-doing. A long list of diseases, affecting both males and females, might be presented as the direct consequences of this form of sexual transgression. Married people should recollect that the duty of restraint is as binding upon them after, as before marriage."

Some very pronounced ideas have been advanced, in regard to strict continence. Let us hear what Dr.

Acton, a celebrated English surgeon, has to say on this subject. In answer to the statement sometimes made, that habitual inactivity of the organs of generation would result in impotency, the writer here quoted, declares: "There exists no *greater error* than this, nor one more opposed to physiological truth. In the first place, I may state that I have, after many years' experience never seen a single instance of atrophy of the generative organs from this cause. I have, it is true, met the complaint, but in what class of cases does it occur? It arises, in all instances, from the exactly opposite cause, abuse; the organs become worn out, and hence arises atrophy. Physiologically considered, it is not a fact that the power of secreting semen is annihilated in well-formed adults leading a healthy life, and yet remaining continent. No continent man need be deterred by this apocryphal fear of atrophy of the testes, from living a chaste life. It is a device of of the unchaste—a lame excuse for their own incontinence, unfounded on any physiological law."

In reply to the assertion so frequently made, that abstinence produces suffering, and that indulgence gives relief, Dr. Acton states, "that attention to diet, gymnastic exercises, and self-control, will most effectually relieve the symptoms." Moreover, Dr. Acton assures us, that in the start, the sexual necessities are not so uncontrollable as is generally supposed; and that they can be put down by the exercise of a little energetic will. He thinks it a great injustice, to accuse nature of disorders which are the result of our own folly. Strict attention to the character of the diet, sufficient exercise or employment, and a proper amount of bathing combined with personal cleanliness, will do much to prevent abnormal conditions of the sexual organs.



In speaking of sexual continence during the period of gestation, Dr. Kellogg gives some very excellent advice. He believes that human beings should at least be as chaste as the lower animals; and that a disregard of this rule is a frequent cause of abortion, and of sexual diseases in women. Many gynecologists have made similar statements, all tending to prove that the sexual act during gestation is productive of much mischief, both to the mother and to the unborn child.

Dr. Rosch, who has written a work on "The Chronic Diseases of Women," is thoroughly convinced that cohabitation when the wife is pregnant, is a monstrous crime against physiological law. He recommends that human beings study the lower animals, and learn from them; these, unlike the human animal have proper respect for maternity. He remarks, that after the female becomes pregnant, only such animals as cats, dogs, etc., which are capable of further fructification, and produce several young ones each resembling a different father, will permit a second connection. That after conception has taken place, the female will not allow the approach of the male; and as if by a mutual understanding, the personal rights of the prospective mother are respected. How is it, that "only intelligent man can err"; that he believes himself entitled to his enjoyment—despite the fact that such indulgence gives rise to many diseases, which entail much suffering upon the mother. The child too is robbed of its vitality, as is shown in its after life.

Dr. Rosch is thoroughly imbued with the fact that the holy instinct of sexual love, is intended as a means to a great natural end. He remarks, that in the taking of *food*, this act is attended with enjoyment; but it does not follow that the individual should eat and drink

continually. When the wife has conceived, the object of sexual intercourse is attained; and continued indulgence is not only futile, but injurious. He likewise asserts, that the woman when pregnant ceases to be capable of any pleasure in the sexual relation; she does not respond as before; which is nature's hint that further indulgence is prohibited. It is well to note in this connection that there may be a diseased condition of the sexual organs, causing irritation and excitement, which is sometimes *mistaken* for normal instinct. Some women feel terribly because they cannot respond as heretofore, and so they endeavor to hide from their husbands the lack of enjoyment on their part.

It would seem that an individual with a grain of sense, ought to *know* that when so important a function as the creation of a new being is in progress, the organs concerned should not be disturbed; they should remain in a *quiescent* state, until the one supreme object is accomplished. What is more, the father who cannot deny himself, even for the welfare of his wife and child, is in no way deserving to *have* a family. The sacrifice, if such it is, should be mutual. But if the father persists, he becomes, in the language of the author above quoted, his child's first enemy. Nevertheless, too many husbands and fathers are deaf to the voice of reason, and even to the language of nature. Self-gratification, with them, is of the highest importance; they claim their "rights," at all hazards. "Has the world ever harbored greater nonsense than this?" Among the diseases to which such indulgence gives rise, are vaginal discharges, hysteria, miscarriages, bad confinement, uterine displacements, tuberculosis, and premature decay—to say nothing of constitutional defects in the offspring.

Dr. Alice B. Stockham, who for many years carried an

extensive practice among women and children, and had every opportunity to note the effects of sexual indulgence during pregnancy, has declared her convictions on this subject. She believes that a woman's "body is her own, and her soul is her maker's." The husband too should come to understand, that *wives* have some rights which every true man is bound to respect. The wife who serves her husband sexually without restraint, gives up all *ownership* of self; and "what is the difference between *her* life and the life of the public woman? She is sold to one man, and is not half so well paid. Is it too strong language to say, that she is the one *prostitute*, taking the place (for the man) of many, and not, like her, having choice of time or conditions? In consequence she not only suffers physically, but feels disgraced and outraged to the depths of her soul."

Dr. Stockham relates a case in which she was consulted by a woman who was the mother of five children, all born within ten years. These children were "puny, scrofulous, nervous and irritable"; and the mother herself was in wretched health. This woman was on the verge of despair; and she asked how she could safely *prevent conception*. She said her strength was constantly drained sexually, her husband claiming his martial "rights" (except three or four nights immediately after confinement), greatly to her physical detriment. But for this one trait in his character, the wife might love him devotedly. As it was however she detested and loathed him; moreover, she declared that if she knew how to support herself and children, she would leave him. Dr. Stockham sent a message to the husband; she said, "Tell him that I will give you treatment to improve your health; and if he will

wait until you can respond, *take time for the act, have it entirely mutual from first to last*, the demand will not come so frequent."

The lady went home, followed instructions, and in six months she was restored to health. At the end of that time she reported in person; and here is what Dr. Stockham has to say of the case. "A single coition in a month gave the husband more satisfaction than the many had done previously; the creative power was under control, and my lady could proudly say 'I love,' where previously she had said 'I hate.' If husbands will listen, a few simple instructions will appeal to their *common sense*, and none can imagine the gain to themselves, to their wives, their children and their children's children. Then it may not be said of the babes that their 'Death borders on their birth, and their cradle stands in the grave.'"

A strong objection that Dr. Stockham urges against habitual indulgence in the sexual act, is that the wife lays herself liable to a chance maternity; and the "unwelcome child is not only deprived of physical vigor, but may be endowed with lustful passions and morbid appetites, if he does not curse his own existence."

In Dr. Stockham's work on Tokology, page 149, is the following paragraph: "A principal of a high school in Iowa, said he was a married man many years before he knew the sexual relation was ever sustained during pregnancy. When he learned it, he asserted his whole soul was filled with shame and horror, that his sex had no better knowledge of their protective duties relating to maternity." Dr. Stockham remarks, that those desiring the best reproduction of themselves should learn that;

“Control of appetite is the first step in human culture.

“The first right of a child is to be well born.

“No man should become a father, who can not and will not observe the demands of temperance in all things for the benefit of his child.

“Motherhood is the central fact of human life.

“Every mother should be set apart during pregnancy for the ante-natal culture of her child.”

A work highly recommended by the writer just quoted, is one on Chastity, by Dr. Dio Lewis, in which he teaches that the sexual act should never be entered into except for procreation. This doctrine, exclusive as it may seem to be, is endorsed by many able thinkers and writers. The Rev. C. H. Churchill, of Oberlin, Ohio, says: “It is a book which should find a place in every home, and should be carefully read, especially by the young.”—Another work (a small pamphlet) written by E. A. Newton, and entitled, “The Better Way,” is also well worth reading. This author believes that only through continent lives, can we hope for progress.—Dr. Kellogg, who has been repeatedly quoted in these pages, has written a book called “Plain Facts,” which should be in the hands of all who are alive to the importance of human progress and development.

Whatever theory is held in respect to sexual relations in married life, one thing is absolutely certain; the *integrity of the race*, physically, intellectually and morally, must be a guiding principle. Anything that would sacrifice this, is not for a moment worth considering. We need more books, chaste and pure, which will deal with the subject from a strictly physiological standpoint. Not only so, these books should be read by the young of both sexes before marriage. It is very much easier to start right in the married relation, than

it is to return to correct habits after years of indulgence.

We have some very high authorities among physicians, hygienists, and health reformers in general, who advocate lives of strict chastity. They believe that such a life not only promotes moral purity, together with physical vigor, but that it contributes largely to the success of the individual, in business and other enterprises. They further maintain that licentious habits (whether in the marriage relation or out of it) will impair the integrity of the digestive organs, interfere with nutrition, and lower the tone of the whole nervous system. They hold that the generative element has for its object the *reproduction of the species*; and that to waste it needlessly, is to impair or destroy the functions of the various organs of the body.

In discussing the law of continence, Dr. Cowan, in his "Science of a New Life," states very positively that licentiousness will of necessity cause a great drain upon the vitality of the individual; such a drain as will require the whole life force of his system to supply. This author lays much stress upon the importance of avoiding evil associations; the young man should choose for his companions only those who by precept and example will lead him steadily upward; not those who will destroy his purity of soul, and drag it into the mire. Continuing, he says: "Especially should the continent man exercise his *will power*; for the doing of this not only enables him to lead a continent life, but it as surely guides to success in all business undertakings. Through the right exercise of the will the body is strengthened, the soul enlarged, and right habits of thought and action increase and grow; for every victory over one's bad habits, *strengthens the victor*. The first misstep through want of will power, is but the

commencement of a long series of failures. Every succeeding conflict is harder, because the last has been lost."

To assist a young man in his efforts to lead a continent life, the author above quoted recommends that the following things be avoided:

Tobacco in all its forms.

All manner of alcoholic liquors.

Late suppers and overeating.

Sweetmeats, candies, etc.

White bread, when it is possible to get the graham.

Pork, and all fat and salt meats, sausages, pickles, oysters, lobsters, eels, etc.

Salt, except in moderate quantities, pepper, mustard, spices, vinegar, and other condiments.

Mince and other pies, and all manner of pastry.

Tea, coffee and chocolate.

All constriction of dress about the body.

Idleness and inaction of body and mind.

Feather beds and pillows, and heavy bed coverings.

Unventilated and unlighted bedrooms.

Remaining in bed in the morning after waking.

Companions of doubtful or bad natures.

Irresolute will.

Uncleanliness of body .

Turkish and Russian baths.

Drugs and patent medicines.

Plantation and all other kinds of "bitters."

Quack doctors.

Quoting still further, "There is not an article of food, condiment, or so-called luxury mentioned above, that is in the remotest way necessary to the growth and development of a healthy body and soul." To live a pure and chaste life, the individual should be

temperate in all his habits; he should also observe regularity in eating, and pay strict attention to the quantity and quality of foods; nothing should be taken between meals. Fruits of various kinds are highly recommended, these to be used as nearly in their natural state as possible. Systematic bathing is of the utmost importance; and the individual should live much out of doors, in the open air and sunshine. Regular morning evacuation of the bowels, is especially emphasized.

The whole subject of continence relates itself very intimately to the habits of the individual; we have abundant corroborative testimony on this point. If there is weakness in the sexual organs, as shown by seminal emissions, the thing to do is to treat in such a way as to reduce congestion in local parts, have the patient live correctly, and endeavor to build up the general health. When the health is perfect, the tone of the nervous system good, there will be no trouble with the generative organs. Where the need is felt of frequent sexual indulgence, the general physical conditions are at-fault. If there is a manifestation of undue excitement in the sexual organs, it is because they have already become weakened or diseased. Whence it follows, that the way to live a chaste and continent life, is to bring the whole physical organization under the dominion of natural law; make every organ and tissue in the body as sound as possible, and the appetites and passions will be easily controlled.

As in every other reform dealing with the laws of life and health, there will be only a limited number of individuals who have the courage to either advocate or practice the new principles. To such as persist in following the old way, it is extremely hard to lend a helping hand. Often the best that can be done, is to



give a caution as to the dangers they will encounter, and suggest methods of improvement. Attention to diet, bathing, exercise, rest, etc., will accomplish much, particularly if the individual leads an industrious life. Dr. Cowan remarks, that everyday employment, whether of body or mind, should be as much a necessity to every man or woman, as eating. "A man who is constitutionally lazy, and careless about working, is nearly always a licentious man. An idle life, and a chaste and continent life, cannot possibly be found in the same individual."

The object sought in these pages is to help each one of our readers to do as well as he can. Not every young man is so born and brought up, that he is able at all times to lead a strictly exemplary life. On the other hand, very few are so degraded that their lives cannot be improved; and whatever benefits the individual, will help to elevate the race as a whole. We should not be discouraged if the upward progress is slow; it is inch by inch that the victory of truth is won.

## CHAPTER V

### CHILDBEARING MADE EASY

The act of giving birth to a child, is a thoroughly *physiological* process; and under normal conditions, there is not the slightest reason why it should be painful. The muscles concerned in parturition, do not differ essentially in their construction from *other* muscles. They consist of fibers and filaments, and of a certain amount of areolar tissue which binds them together, and which also constitutes an external envelope; the latter unites the muscle to the neighboring parts, and admits of its motion. Every muscle is supplied with arteries, veins, lymphatics, and nerves, these last being very numerous. As regards their functions, the muscles of the body are divided into two kinds, the *voluntary* and the *involuntary*. The first named are under the influence of the will; the second are not. The involuntary muscles preside over the functions of *organic life*—as in the heart, the stomach, the bloodvessels, etc., and are called into action by certain special stimuli.

The muscles that take part in childbearing are of both kinds, the voluntary and the involuntary. Those of the uterus belong to the second class, and are the ones chiefly concerned in parturition. I say *chiefly*, because there are other muscles which co-operate in this process. In every normal labor, the *abdominal* muscles play an important part in the act of expulsion. When

these are weak or inefficient, the last stages of labor are apt to drag; and if the muscles of the uterus are in a similar condition, the labor as a whole is often greatly prolonged. In either case, serious complications may arise.

It has been truly said, that giving birth to a child, is just as natural as for ripe fruit to fall from the tree—or a flower from its parent stem. Nature has everything in readiness; the foetus comes to maturity, and there is no longer any need for its connection with the mother's body. When labor commences certain muscles contract, in order to expel the child. The process, from beginning to end, is very simple. Why, then, should it be attended with pain?

Let us take a familiar illustration of muscular contraction, that of opening and shutting the hand. An act of this kind is not attended with painful sensations—unless the hand has been injured, or is diseased. But some one will say, uterine contractions are different. Why should they be? Both acts are muscular, and I see no reason why either should be painful.—Take another illustration; when we masticate our food thoroughly, it very nearly slips down of its own accord, without any effort on our part. If pain were experienced in swallowing, we would know immediately that the muscles concerned were either injured or diseased. So, too, in expelling the feces, where the intestinal tract is in a strictly normal condition, defecation is easy and painless. If there is pain, something has gone wrong; there may have been indigestion, the mucous membrane becoming inflamed. Habitual constipation often causes the development of pile tumors, so that passing the feces is exceedingly painful. Indeed, we might go on indefinitely,

showing that the various functions of the body if *normal*, are performed without suffering. Nature never intended that it should be otherwise.

But we know perfectly well that women *do suffer* in giving birth to their children; and the question is, what are the causes of this abnormality, and how can they be avoided? So common has painful parturition become, that mothers scarcely expect anything else; and some people even go so far as to say, that it is a judgment sent upon women because of Eve's transgression. They do not understand that effect follows cause; that Eve's daughters have violated the well-known laws of physiology, and suffer in consequence.

To make childbearing easy, the muscles which take part in that process must be free from disease; they should also be *well developed*. A perfect muscular system lies at the foundation of all good health. *Enfeeble* the muscles, and what are we good for? *Disable* them, and what can we accomplish? In this day and generation, there are schools for physical culture; but who, pray, is receiving the benefit of them? Most women before they reach maturity, are really in no condition to do work in a gymnasium; nor anywhere else if a great deal of strength is required. Women have half ruined themselves physically, and in many ways. Their habits of eating, for example, are anything but normal; and as a result, they suffer from indigestion, constipation, bilious colic, stricture of the bowels, bleeding piles, etc., etc. All this must of course be corrected; women, if they would do their share of the world's work, either in bearing children or in other respects, *must get rid of their ailments*.

To develop good sound bodies, the women must first of all, eat correctly. The food should be plain and sim-

ple, such as the needs of the system require; it should also be taken in moderation, and at stated intervals. Some women are extremely *adipose*; this condition is produced by sedentary habits, eating too much and of improper food, and by violating other health rules. Women who are enormously fat, are generally lacking in physical strength; their muscles are thin because they are pressed upon by adipose tissue, the latter interfering with their growth and development. The fat fills up the genital tract; and in giving birth to a child, there is no room for it to pass. It is well to remember the golden rule in obstetrics, that in labor the foetus must *follow the line of least resistance*. But if the passage is blocked up, what then? There will be a condition of *stasis*; the child can not advance. Moreover, if the *vis a tergo*, the power behind, is wanting, labor will not progress; and when muscular contraction ceases, artificial aid will be required.

Many prospective mothers live in such a way that the child itself is a great deal too large; so how can it be born with ease? A big infant and a small canal for its egress, are two very prominent factors in difficult labor. It follows therefore, that if women would bear their children without pain, they must develop *muscular* tissue, rather than fat. As things are at present, most women eat too much and stir too little. This is particularly true where families live in hotels, flats, and boarding houses; the women take so little active exercise, that the system is constantly surfeited; and if they become pregnant, the foetus at maturity will be abnormally large. Fifty and sixty years ago, when women were more active, the average weight of a new-born infant was seven to eight pounds. But now the average is much higher; and it is not an unusual

thing for the child to weigh twelve or fourteen pounds, and some are even larger.

From what has been said in the preceding paragraphs, it is plain that muscles to do good work, must be well developed and free from disease. If too small, they cannot perform their functions normally; and if injured or diseased, the muscles cannot contract without pain. The facts just stated, are as self-evident as that *two and two make four*.

What then is necessary, in order to make parturition *painless*? The question answers itself; keep the system free from disease, provide muscular force, and there will be no trouble in giving birth to a child. The truth of this proposition is illustrated in the lower animals, and also among savage tribes. Neither of them experience pain in bringing forth their young; and the same thing is true to a certain extent among the peasantry of Europe. The forces that are employed in the parturient process are not impaired, and the labor is not difficult.

The question that the women of civilization must answer, is this: Will *they too* supply these normal conditions, and give birth to their children without suffering? If so, then is humanity saved; the births will equal the deaths, and the race will be in no danger of extermination. If, however, our women continue to live at variance with the laws of physiology, in diet, dress, etc., then indeed are we on the verge of race suicide! It is a settled fact that in nearly all civilized countries, the bearing of a child is a thing to be dreaded; and no doubt this is *one* reason why so many women are trying to avoid pregnancy. A process which ought to be as natural as drawing one's breath, has under present conditions become a terrible ordeal. Many wo-

men would like to have children if they dared; but the risks are too great.

The truth is, our women have strayed far from nature; and to return to the right path, is more easily said than done. The task imposed would require much thought and perseverance; indeed, so far as the habits of the women are concerned, it would be not only reformatory but revolutionary. They must change their mode of dress; modify the character of their diet; live more out of doors, and in a purer atmosphere; take sufficient exercise; build up muscular tissue, not fat; and the blood that makes these tissues, will have to be pure in quality. If the girls of our country, those who are destined to become the mothers of the race, would devote as much time to the study of physiology and the laws of health, as they do to the so-called accomplishments, it would be better for themselves, and infinitely so for posterity.

The young woman who lives in a corset, or a long and snug-fitting waist, is in no way prepared to marry and bear children. If she hangs her skirts on her hips, pulling the uterus and other organs out of place, she is laying the foundation for future misery. If by an unequal distribution of clothing she overheats the pelvis, leaving the extremities insufficiently protected, the circulation becomes unbalanced and pelvic congestions will arise. If she sits a great deal indoors, and fails to take active exercise daily in the open air, this will not only prevent good muscular development, but predispose to congestion of the pelvic organs. Women in modern life, and especially those who are wealthy, do not bestir themselves enough to make strong muscles; they become fat and inactive, not to say lazy.

Again, the woman who eats incorrectly, living largely

upon stimulents and condiments, highly-seasoned foods, meats, pastries, etc., begets an inflammatory condition of the blood. This too feeds congestions, and the tissues made are ~~not~~ of good quality; how *can* they be, when the blood is impure? If she becomes pregnant, the unborn child will partake of the abnormal conditions. I knew a prospective mother who up to the time of her confinement lived on fried steak, hot biscuits and butter, strong coffee, and other unwholesome foods, which made her exceedingly bilious. The infant when born was in a similar condition, and was quite sick for two or three weeks. So long as women think more of gratifying their appetite than they do of giving birth to healthy children, parturition will be attended with pain.

In the early settling of this country, the people as a general thing lived nearer to nature than they do now; they ate simply, took plenty of exercise, and were not given to habits of dissipation. The wives and mothers did their own work, lived out of doors a great deal, and the bearing of a child was not so much to be dreaded; moreover, it was rarely attended with danger.

No farther back that the middle of the nineteenth century, some examples of almost painless labor came under the notice of the writer. A classmate of mine (a farmer's daughter) was a young girl of very simple dietetic habits. She lived chiefly on fruits, cereals, and vegetables plainly cooked, and would not touch anything made of white flour. A slice of white bread if eaten made her sick, and the stomach would immediately reject it. Whether the dislike for such bread was due to some ante-natal influence, I do not know; but the fact that she was a great lover of plain corn



bread (containing neither sugar nor soda) and other simple articles of food, had no doubt much to do with her good health; her skin was smooth as an infant's, and a clear pink like a seashell. In her habits of dress, she stood equally near to nature; she wore no corset, robed herself loosely, and suspended her garments from the shoulders. She lived much in the open air, went to bed early, and had regular hours of sleep; and so long as I knew her, she was never sick a day.

This young woman married at nineteen or twenty, and became the mother of numerous children. The neighbors said, that she ought to have *all* the babies, as her labors were never painful; following the custom of the country, however, she kept her bed for a few days after the birth of a child. It was a matter of comment, that she had not lost the roses in her cheeks, but looked as young and fresh as ever.

Another of my schoolmates was a young woman of very simple habits; her father had but one boy, and she helped with the farm work both winter and summer. At school, she distinguished herself for fast running; she could outrun almost any boy in the neighborhood. She too discarded the corset, and hung her skirts from the shoulders. This girl had normal instincts, not only in dieting, bathing, etc., but in everything else; an artificial life she thoroughly detested. When twenty-seven or twenty-eight years of age she married a man who was if possible more radical than herself, in things pertaining to health. During her first pregnancy she became acquainted with an old French doctor, who was greatly interested in matters relating to health and hygiene. He advised her to live largely upon raw ripe fruits, and to use but little bread or other solid food. He believed in so regulating the diet

for the prospective mother, that the bones of the infant would be yielding; more *cartilaginous* than osseous. She followed his instructions to the letter, and her health was excellent; she continued to live out of doors a great deal, and took exercise daily in the open air.

Toward the end of gestation, she returned one morning from a walk; and feeling a little tired, asked her husband to prepare the lounge for her to rest on, while she went up stairs to take off her wraps. A few minutes later she came down to the sitting room, and in walking across the floor, dropped her baby; it uttered a cry, and the mother exclaimed, "There!" The husband gently lifted the infant, in a few moments severed the cord, and did what was necessary in caring for his wife and child. This woman told me afterward that she had experienced no pain, and was not weakened in the least. There was no loss of blood, and she felt as strong as before; though for "decency's sake" she kept her bed about a day and a half. The little one was perfectly normal, and never had any of the ailments so common to infants.

For several days previous to the birth of the child, the diet of the mother had been almost exclusively raw ripe fruits; this of course kept the intestinal tract free, and helped to secure an easy labor. Not only is pain abnormal in the parturient process, but the sickness and nausea which usually attend gestation are also needless, provided the woman has good digestion, and a suitable environment with no disturbing influences. It is a fact not generally known, that *sexual intercourse* during the period of gestation, is a frequent cause of indigestion and nausea in the mother. Moreover, it tends to congest the pelvic organs; often to such a degree as to produce an abortion or miscarriage.

Mothers (and fathers as well) ought to understand that a function so important as the creation of a new being, should not be interfered with in any way.

Still another classmate of mine, who made it a point to live physiologically in every respect, was the picture of health when I knew her. She married at twenty-five and had several children. After the birth of her first baby I had a letter from her, stating that she had been remarkably well, better than usual in fact, and suffered no nausea whatever all through the period of gestation; the labor was easy, and the child well developed. That mother is still living, and is now nearly eighty years old.—A woman with whom I am well acquainted, a strict hygienist, married when she was about twenty-six, and within a few years had five children. The births were so easy that she would not have a physician in attendance, declaring that an ordinary nurse was all she required. This lady never used meat or other rich foods, and was not troubled with nausea during gestation. Two of her daughters are married, and have children; and although they do not live quite as strictly as their mother did, they have neither of them had a difficult labor.

In my early practice in St. Louis, I attended more than one woman who though nearly forty years of age, suffered but little, even at the birth of her first child; the labor was of short duration, not specially painful, and there was no laceration of tissue. About 1880, a patient seeking advice stated that she was pregnant, and wanted some directions that would help her to secure an easy labor. In a previous confinement the child weighed eighteen pounds (she herself weighed over two hundred and fifty), died in the birth, and was taken with instruments; the pain of course was some-

thing terrible. I gave her a strict prescription, as to diet, dress, exercise, &c., and she reported progress from time to time, her general health being very much improved: ~~w~~ Labor commenced in due season, was not greatly protracted, and the pains were not unusually severe. The mother lost considerable fat while under treatment, and the infant when born weighed six pounds less than the other; which shows how much can be accomplished under a system of hygiene, and in a relatively short space of time.

The thing that every woman ought to learn, is that *she herself* is largely responsible for the pains of parturition. She must come to understand that physical suffering is *abnormal*; that there are causes at work which make labor not only difficult and painful, but even dangerous. When we consider what these causes are, it will be easily seen that they are preventable. The bearing of a child, as we know, is attended with muscular contractions. Suppose however the muscles concerned are diseased; they will either be unable to contract without pain, or they fail to act at all. If the woman has been extremely constipated, not only during gestation but before she became pregnant, then the muscles of the abdomen (which should aid in normal labor) will be flabby and inactive. The constipation itself may be due to a variety of causes; as sedentary habits, injudicious eating, living in a corset, wearing snug clothing, making pressure upon the soft abdominal walls, etc., etc. An easy birth is out of the question, if the muscles are not well developed and normally active.

To render this whole matter as plain as possible, suppose we give some general directions for the guidance of those who wish to become mothers.

FIRST.—The woman herself ought to be well born;

she should inherit from her father and mother a sound constitution. Without this, she can hardly hope to give birth to offspring that are hardy and robust; what is more, a feeble constitution or a system that is diseased, will predispose to complications in labor. A woman who is feeble and sickly, hardly able to take care of herself, is not prepared for the duties of wifehood, much less maternity.

SECOND.—From childhood to maturity, no pains should be spared to develop the young woman physically, so that every organ and tissue in her body will be in a normal condition. The girls (as well as the boys) should have every opportunity to make good strong muscles. Their mothers instead of telling them to stay indoors, be “nice little ladies,” and not rip round and tear their clothes off, should send them out of doors winter and summer, to race over the hills and have a good time generally. If the mothers would go with them, it would be better still; better for both. Never mind if the girl is a tomboy, and tears her dress occasionally; we need *more* tomboys, and fewer little girls that are nice and “primpy.” Not only so, mothers make a great mistake when they want their daughters to become young ladies at an early age. A sound mind in a sound body, is vastly more important than to develop a society belle. The very fact that most of our girls will some day be mothers, is a strong argument in favor of rearing them properly.

But what young woman is so brought up? Does she dress physiologically; or shall we find her in a corset, or a snug-fitting waist, the whalebones pressing upon the abdominal muscles and the soft internal parts, forcing important organs out of place? Are her skirts suspended from the shoulder; or does she tie them

around her waist with a string, and thus interfere with respiration, digestion, and other important functions? Does she clothe the body evenly, and keep the circulation well balanced; or have the pelvic organs become so congested that menstruation is a profuse *hemorrhage*, draining the life blood out of her?

Does the young girl retire at a seasonable hour; or is she often out late at night—either that, or sitting up reading trashy novels, instead of going to bed with the birds? Do her eyes look clear and bright; or have they dark rings around them? Has she warm hands and feet; or are they often ice cold? Does she exercise daily in the open air and sunshine? And can she expand her chest three to four inches, taking in enough oxygen at every breath to purify the blood? Are her clothes worn so loosely that the air can circulate unobstructed between them and the skin? And are her garments so fashioned that there is no restraint put upon muscle or limb; can she exercise as freely as her brother does on the playground? Do her cheeks look fresh and rosy like an infant's (the pink and white blended together), or shall we see them flushed—dark red in the center, and a paleness about the mouth?

And what about the food eaten? This, if normal, should be practically free from seasoning and condiments, and stimulants of every kind. Does she drink tea and coffee, eat pickles, preserves, confections, rich pastries, meats, and hearty foods of various kinds, giving her indigestion, constipation (or diarrhoea), piles, a pain in the liver, in the appendix, or about the coecal valve? Does she sometimes get up in the morning with a bad taste in the mouth, a furred tongue, and no appetite? Is she excessively fond of sweets, using quantities of sugar, confections, etc.? Are the staples on her

table fruits, cereals, fresh nuts, and vegetables plainly prepared; or does she live mainly on meats, pastries, and other rich dishes? Are her foods, plain and simple, prepared chiefly in her mother's kitchen; or do they consist largely of the things we see in the bakeries and candy shops?

THIRD.—A woman when she becomes pregnant should be physically at her best, and able to ward off disease; she is taking upon herself an added function, and will need all the vital resources which good health can give her. She should keep the skin active by sufficient bathing; and thorough rubbing with the hands, not only after the bath but at other times, will impart tone to the muscles, keep the circulation well balanced, and tend to hold every organ in its normal position. The frequent use of the *sitz bath* (see page 384), especially during the last three or four months of gestation, will counteract any tendency to congestion in local parts, and strengthen the muscles immediately concerned in parturition.

FOURTH.—The prospective mother ought already to be familiar with the best works on health and hygiene. If she knows little or nothing of these subjects, let her consult a hygienic physician, or read books that will give her the desired information.

FIFTH.—As to diet, dress, exercise, etc., the woman should observe strictly those rules and regulations which are essential to health. Abundant exercise in the open air and sunshine, not merely in the early months of gestation but all through it, will keep her muscles in good working order, give her a normal appetite, and promote good digestion. The blood too will be kept pure, because of the oxygen which the lungs will receive daily.—The mistake many women make when pregnant, is

to house up closely and consider themselves invalids; whereas they ought to be physically sound, and able to attend to their ordinary duties.

SIXTH.—A rule to which there are no exceptions, is to keep the intestinal tract *free* through the whole period of gestation. This is particularly important during the last two or three weeks before the birth of the child. Any obstruction in the bowels, or packing of fecal contents in the colon or rectum, will tend to congest the pelvic organs and tissues, and a painful labor will be almost sure to follow.

But in order to secure this freedom in the intestinal tract, the *diet* should be strictly correct; the habitual use of raw ripe fruits, as apples, oranges, grapes, peaches, etc., will be highly beneficial. To attempt to free the bowels by means of a cathartic, will simply make a bad matter worse; the relief is only temporary, and in a short time the bowels will be more constipated than before. A little dish of cracked wheat thoroughly cooked, and served at breakfast with stewed fruit or fruit juices, will do much to encourage peristaltic action of the bowels, and to render evacuations easy and normal.—The bread eaten by the mother (the unleavened is best) should either be made from a good quality of graham, or whole-wheat flour, or from corn-meal. It need hardly be said, that sufficient exercise taken daily, and as far as possible in the open air and sunshine, will go a long way toward keeping the bowels in good condition.

SEVENTH.—In the matter of diet, what is good for the woman in ordinary health, will very nearly meet the requirements of her system when she is pregnant. The habitual use of raw ripe fruits is especially suited to her needs; these, with a limited amount of fresh nuts,



cereal preparations, and vegetables plainly cooked, should be staples in the dietary. Not a great deal of animal food, particularly meats, should be eaten; these tend to thicken the blood, obstruct the circulation, and beget a gross condition of the system. The woman should eat or drink nothing that cannot be readily converted into good sound tissue. An abundance of pure soft water, this usually taken away from the mealtime, will help to keep the system well sewered, and the blood in a healthy state. It is only when the food eaten is deficient in fluids, that water is required at mealtime; even then, it should be taken in sips (not too cold) along with the solid materials.

During gestation, the diet should not contain a great deal of solid food, nor food that tends specially to make *bony* tissue. To insure an easy labor, the bones of the foetus should incline to be cartilaginous, rather than osseous. For this reason, the mother should eat freely of raw ripe fruits, juicy vegetables, etc., and less *solid* food, as breadstuffs, and the like. Subacid and juicy fruits, as apples, oranges, grapes, peaches, etc., are specially adapted to this class of individuals. These will tend to keep the liver active, and the intestinal tract in good order. We must never forget that the human body is more than three-fourths of it water; and that not a great amount of solid material is really needed.—But, I hear a woman say that *she* cannot eat fruits, and particularly the acid or subacid varieties. Very well! I know what *she* can do; when labor comes on she can bear her pains in silence—or otherwise. Some people have not yet learned, that likes and dislikes are largely things of *habit*; and that we can do almost anything, if we make up our minds to it.

To sum up: The way to make childbirth easy, can

be told in few words—*do right*. As stated in our old copybooks, "Obedience to law is the key to happiness." True, not every one understands the law; but if each individual would do even as well as he knows, there would be a great deal less suffering in the world. Moreover, if we were particularly anxious to find out the right way, and conform our lives to it, the advantages derived would be very great.

The woman who can develop good sound muscles and other tissues and *keep* them so, will, if she becomes a mother, be able to bear her children with little if any pain. But if, like other women, she lives in such a way as to enfeeble these muscles and tissues, or to make them diseased, then she will have to suffer in childbearing, as other women do.

## CHAPTER VI

### THE CURSE REMOVED.—AUTHORITATIVE TESTIMONY

Possibly many of our readers will regard what has been said in the preceding chapter, as too optimistic; as theoretical, rather than practical. Now, the writer of these pages would have it distinctly understood, that on every point advanced there is *corroborative testimony*, this being given by some of our ablest and best physicians and writers. Let us hear what they have to say.

Dr. Dewees, Professor of Obstetrics in the Medical School of Pennsylvania, in his Thesis on Childbirth, remarks: "Pain is a morbid symptom: the consequence of artificial modes of life and treatment." He believes that "it is a perversion of nature caused by modes of living not consistent with the most healthy condition of the system." He adds, that a regimen which would insure a "healthy condition of the individual, might be counted on with certainty to do away with such pain."

Professor Huxley, in his paper on Emancipation, Black and White, says: "We are indeed fully prepared to believe, that the bearing of children may and ought to become as free from danger and long disability to the civilized woman, as it is to the savage."

Dr. Tuke, another prominent authority, states, that according to the general testimony of travelers, par-

turition "interferes much less, and for a shorter period, with the healthy action of the body and mind among savage nations, than among the luxurious daughters of artificial life." Those who have traveled in India, Hindostan, China, Japan, and the South Sea Islands, have given strong testimony on this point; they assure us that "in no country do women suffer in pregnancy and parturition, as they do in this."

Dr. M. L. Holbrook, New York, has written a little volume, "Parturition Without Pain," which ought to be in the hands of every mother, and of every reader who is interested in the welfare of the race. On page 22 of that book he quotes from Dr. Montgomery's classical work on Pregnancy, in which several cases of painless parturition are described. In one of these, the prospective mother was "awakened from a natural sleep by the alarm of a daughter about five years old, who had slept with her for some nights before; and this alarm had been occasioned by the little girl feeling the movements and hearing the cry of an infant in the bed. To the mother's great surprise, she found that she had brought forth her child without any consciousness of the fact."

Dr. Holbrook also quotes from the "London Practice of Midwifery." "A lady in great respectability, the wife of a peer of the realm, was actually delivered once in her sleep. She immediately awakened her husband, being a little alarmed at finding one more in the bed than there was before."

Dr. Montgomery speaks of a patient of his who bore eight children, without ever having labor pains; "her deliveries were so sudden and void of sensible effort, that in more than one instance they took place under most awkward circumstances, but without any suffer-

ing." The same writer relates the case of a primipara, "aged twenty-one, who had been in labor about six hours; she complained of no pain, and the child was born without effort or consciousness."

Dr. Holbrook mentions the case of "a lady in New England who had five children, and who, unless at her first delivery, experienced no pain." He remarks too, that "Those women of savage nations who bear children without pain, live much in the open air, take much exercise, and are physically active and healthy to a degree greatly beyond their more civilized sisters." These instances, he says, "tend directly to prove that parturition is likely to be painless, in proportion as the mother is physically perfect, and in a perfect condition of health." He thinks that modern scientific investigation "has gone far to justify a belief that this terrific burden upon humanity can be almost entirely removed; that the pain of parturition can be as completely done away with, as the danger and disfigurement of smallpox."

Dr. Alice B. Stockham, in her excellent work on Tokology, remarks, that "Understanding and following physiological laws, pregnancy *ought* to be as free from pathological symptoms, and parturition as free from suffering with American women, as with any tribe on earth." Speaking of the North American Indians, this writer states, that she has herself seen a squaw of the Ottawa tribe carrying her papoose upon her back strapped to a board, when it was only twenty-four hours old.

Dr. Stockham describes a case in her own practice, in which the woman gave birth to two children without suffering any pain. With the first, she was alone with the nurse. Feeling a little weary, she remarked that

she would lie down. But in about twenty minutes she called to the nurse, saying, "How strange I feel! I wish you would see what is the matter." An examination was made, and to their astonishment the child was born! Two years later, Dr. Stockham was called to the same lady about ten o'clock at night. The membranes were ruptured, but there were no other signs that labor had commenced. The woman fell into a quiet slumber, and Dr. S. noticed that there were regular and distinct muscular contractions. About two o'clock, the child was born without any sensation of pain.

Mrs. Elizabeth Cady Stanton, in a lecture to women, has stated her convictions, some of them drawn from her personal experience, that parturition should be painless. She remarks that, "We must educate our daughters to think that motherhood is grand, and that God never cursed it. And the curse, if it be a curse, may be rolled off, as man has rolled away the curse of labor; as the curse has been rolled from the descendants of Ham. My mission among women, is to preach this new gospel. If you suffer, it is not because you are cursed of God, but because you violate his laws. What an incubus it would take from woman, could she be educated to know that the pains of maternity are no curse upon her kind. We know that among Indians the squaws do not suffer in childbirth. They will step aside from the ranks, even on the march; and return in a short time bearing with them the new-born child. What an absurdity, then, to suppose that only enlightened Christian women are cursed. But one word of fact is worth a volume of philosophy; let me give you some of my own experience. I am the mother of seven children. My girlhood was spent mostly in the open air.

I early imbibed the idea that a girl was just as good as a boy, and I carried it out. I would walk five miles before breakfast, or ride ten on horseback. After I was married I wore my clothing sensibly. Its weight hung entirely on my shoulders. I never compressed my body out of its natural shape.

“When my first four children were born, I suffered very little. I then made up my mind that it was totally unnecessary for me to suffer at all; so I dressed lightly, walked every day, lived as much as possible in the open air, ate no condiments or spices, kept quiet, listened to music, looked at pictures, and took proper care of myself. The night before the birth of the child I walked three miles. The child was born without a particle of pain. I bathed it and dressed it, and it weighed ten and one-half pounds. That same day I dined with the family. Everybody said I would surely die, but I never had a relapse or a moment’s inconvenience from it. I know this is not being delicate and refined; but if you would be vigorous and healthy, in spite of the diseases of your ancestors, and your own disregard of nature’s laws, try it.”

Dr. R. T. Trall, in his lecture to medical students, described a case in which there was no pain whatever, and no discharge with the foetus except a little mucus. The woman was of Irish descent, and in excellent health. He also mentions another case, the lady having previously been a patient of his. In giving birth to her child there were strong muscular contractions; but she assured him that there was not a particle of pain. The physician just quoted remarks, that prominent among the habits which cause the perils and pains of childbirth, are errors in diet; and he adds, that “The immediate causes of the pains are a rigidity

and inflexibility of the soft structures on the part of the mother, and *advanced ossification* of the bones of the cranium on the part of the child."

Dr. Andrew Combe, in writing upon this subject, gives it as his opinion that "the previous sound or unsound condition of the system," is a prominent factor in the case; and that women should be more anxious to find out, and more successful in observing the laws of health, both for their own sakes and for the sake of their children.

Dr. J. H. Kellogg, so well and favorably known to all who are interested in health and hygiene, in writing upon Pregnancy, states that he is thoroughly convinced that the curse of fashion, and the long list of influences "which have for ages been telling upon the human constitution, are far more responsible for the terrible agony frequently attendant upon the bringing of a human being into the world, than the *original* curse." In his practice he has had cases in which, by proper care and treatment during pregnancy, the pain was almost entirely eliminated; and in one instance, the lady declared that she suffered no pain whatever.— Among the means which he employs to secure an easy labor, are: A sufficient amount of exercise; care in regard to the diet; a dress that is physiological; strict attention to bathing, mental conditions, etc., etc.

Dr. T. L. Nichols of London, a distinguished hygienist, has written a little work, "The Curse Removed," in which he says: "The women of nature have no such word as 'confinement'—a word so appropriate in civilization. The great truth to be learned by everybody, is that gestation and parturition are natural processes. It is as natural for a woman to bring forth children, as for a shrub to produce flowers and fruit; and her



organs are as naturally adapted for the purpose. In a state of health no natural process is painful. Pain is, in all cases, the sign of disease. It has no other use or signification. With a sore throat, it is painful to swallow; with a diseased stomach, digestion is painful; so is childbirth painful to a diseased nervous system, but never to an entirely healthy one. It is not credible that any natural function should be attended with pain in a healthy state of the system. All nature protests against the idea—all experience is opposed to it. Causes and effects are too well adapted to each other—ends and means too admirably fitted. This world is the work of infinite power and benevolence; the human system is the masterpiece of all this fair creation.”

Dr. Nichols believes that women suffer in childbirth because they have continually eaten the forbidden fruit of enervating luxuries and excesses; that just in proportion as women transgress the laws of nature, are they subject to the curse. “Man has it in his power to incur all direct curses by transgression, or to avoid all curses and invoke all blessings by obedience to the divine law. Industry makes of the barren earth another Eden. Temperance and cleanliness give health, and health brings happiness in all the duties of life. So it is with woman. Indolence, self-indulgence, voluptuousness, and all the sins against the laws which God has written in the structure of our bodies, bring with them the curse of deranged nervous systems, broken health, irregularity of function, disease, pain, and premature death. Every woman is an Eve, and forbidden fruits are all around her. If she listen to the voice of the beguiling serpent, hers is the woe. But, on the other hand, faith in God, obedience to His laws, and living in harmony with His works, assure to woman

health and safety, and joy in fulfilling all her destiny. These are truths pregnant with meaning, and as incontrovertible as the principles of nature."

Our own well-known author and gynecologist, Dr. F. Gaillard Thomas, has written a paragraph which every woman ought to read. He says: "Neither appreciation of nor desire for physical excellence, sufficiently exists among refined women of our day. Our young women are too willing to be delicate, fragile, and incapable of endurance. They dread above all things the glow and hue of health, the rotundity and beauty of muscularity, the comely shapes which the great masters gave to Venus de Medicis and Venus de Milo. All these attributes are viewed as coarse and unladylike; and she is regarded as most to be envied whose complexion wears the livery of disease, whose muscular development is beyond the suspicion of embonpoint, and whose waist can almost be spanned by her own hands. As a result, how often do we see our matrons dreading the process of childbearing, as if it were an abnormal and destructive one; fatigued and exhausted by a short walk, or ordinary household cares; choosing houses with special reference to freedom from an extra flight of stairs; and commonly debarred the one great maternal privilege of nourishing their own offspring. These are they who furnish employment for the gynecologist, and who fill our homes with invalids and sufferers."

## CHAPTER VII

### HINTS TO THE PROSPECTIVE MOTHER

In these modern times, when the "pangs of maternity" are so great that many women shudder at the very thought of giving birth to a child, it does seem the imperative duty of every intelligent physician, to point out the ways in which this suffering can be avoided. The character of the labor however will depend very much upon the woman's physical condition.

Most fortunate it is, if in girlhood she has been properly instructed in matters pertaining to her general health. A careful and judicious mother will see to it, that her daughter's mode of living is such as the needs of the system require. She will dress her correctly, so that no muscle or limb will be crippled in its function, and no organ in the pelvis or elsewhere pressed upon unduly. She will have the young girl live a great deal out of doors, breathing an abundance of pure air, and rejoicing in the sunshine. Sufficient exercise will be provided to make good strong muscles; and with plain and simple food, her appetite will not be perverted; she will digest her food perfectly, make pure blood, and the body will be well developed. It is indeed the duty of every mother to give her daughter such training, both mental and physical, that on entering the marriage relation she will be thoroughly qualified to take upon herself the duties and respon-

sibilities of wifehood and motherhood. The fears and apprehensions which so often mar the happiness of the woman about to marry, are not so much due to the character of the work that lies before her, as to the fact that she has not been properly fitted for it. Where the training of the young woman is what it ought to be, she will look forward to her married life with cheerfulness and high hope; and if she becomes pregnant, this will add to her happiness.

The very thought that a woman is to bring into the world a new being, one that is part and parcel of herself, and of the husband whom she loves, should inspire her with hope, and an affectionate yearning for her child. Would that *all* mothers could be so imbued with that instinctive desire, which every parent ought to feel. Maternity is a sacred thing; and both parents should be thoroughly alive to this truth. Instead of being degrading, it ought to enoble the individual. Motherhood in its highest sense, lies at the foundation of our great commonwealth; moreover, the lack of it will very soon destroy a nation.

To make childbearing easy and natural, quite a number of things are essential. The mother should not only be in the enjoyment of good health, but the environment should contribute to her comfort and happiness. The disposition of a child has often been ruined, because the mother during gestation was worried and annoyed in various ways, her life being rendered miserable. Special care should be taken by both parents, to prevent this; and the husband if he knows his duty, will spare no pains in making the surroundings as desirable as possible. During her intervals of leisure, the mother may occupy herself with books, pleasant society, little outings, walks and drives, and in other

ways which her good judgment will suggest. She should so adjust her *clothing*, that physical comfort will be secured. The new being as well as herself, should have plenty of room to live in; the blood must circulate freely in every part. Very unsightly blemishes on the infant's face and other portions of its body, are sometimes caused by an interference with the foetal circulation due to snug dressing; and deformities of various kinds may be produced in the same way. Perfect freedom of motion, both in the mother and the unborn child, are essential to good development.

Proper attention to the care of the skin, is also highly important. A simple sponge bath at frequent intervals will encourage cutaneous depuration, and promote health; the room should be comfortably warm, and the water not so cold as to shock. Good faithful hand rubbing, either after the bath or while it is in progress, will facilitate action in the surface capillaries, and leave the skin in a glow. Care must be taken not to get chilled afterward; and often it is a good plan to expose the whole body to the air for a few minutes before putting on the clothing. Where there is prompt reaction, a light sponge bath may be taken daily on rising, or at some other convenient time; but with only a limited amount of vitality, every other day would perhaps be often enough. The bath should never interfere with any special *function* of the body; it should always be taken away from the mealtime, say at least an hour before eating, or two or three hours afterward, so as not to disturb the digestive process. Vigorous exercise if indulged in, should never encroach too nearly upon the mealtime, nor upon the hour for bathing.

A proper amount of exercise to give one a good

appétite, and also to call the muscles and limbs into action, is a very essential part of the prescription for this class of individuals. The exercise should be taken daily, and the amount governed by the woman's strength; it should never be so great as to exhaust vital force, nor so small as to defeat the purposes in view. *Straining*, as when one reaches for something high above the head, should of course be avoided; much harm is sometimes done by using the muscles injudiciously. It is a good rule, and of very general application, to take exercise often, and not too long at one time; this applies to walking, riding, and work of nearly every description. Whatever the employment, it should not be so long continued as to become monotonous; a good way, is to introduce as much variety as possible. It is desirable in such cases, to keep both the body and mind pretty well occupied. This will prevent the woman from thinking too much about herself; the time passes readily, and with no sense of weariness.

Plenty of rest and sleep at stated intervals, will be required; this will give a freshness and buoyancy to the individual, and make her feel that life is worth living. Agreeable society is also beneficial; many a child's nature has been sadly perverted, because the social environment of the mother was unfavorable. Too much *excitement* of any kind, is often followed by depression of spirits. Special attention should be paid to the *character* of the mental and emotional influences which may leave their impress upon the mother, and be transmitted to the child. Where it is convenient to do so, she may attend concerts, light theatricals, almost anything that contributes to her pleasure. For persons in moderate circumstances, the little routine of

*household duties* which present themselves from day to day, will have a most wholesome effect. Outdoor work in the yard and garden, or short errands to a neighboring village, will enable the wife to pass her time agreeably, and often with some object in view. Should anything unpleasant transpire, perhaps unexpectedly, the mother should so control herself that no lasting impression will be made upon the new being.

This suggests another point; whether the whims of *appetite* should always be indulged. Some mothers seem constantly on the alert, to find out whether this or that article of food is not necessary for their comfort and welfare. Friends too are often solicitous, in trying to supply certain articles of food which will gratify an abnormal craving. A sensible mother will study the needs of her system, in diet as in everything else; and she will not encourage abnormal longings and desires, especially if the thing sought is obviously hurtful. The staples in the diet should be fruits and cereals, with a limited amount of fresh nuts. The cereals should be very thoroughly cooked, eaten sparingly, and served without sugar. The fruits too if cooked require but little sweetening, and often the dried fruits none at all. As a rule, the subacid varieties are best; the sweet fruits if eaten, usually need no sugar; and some of them are best without cooking. After making due allowance for individual likes and dislikes, there is really not so much difference in people as one would suppose; practically the *same dietary* is suited to each case.

The food eaten should be plain and simple, easily digested, and with not too great a variety at a single meal. If the woman tires of a particular article of diet, changes can be made from one meal to another, and from

day to day. An abundance of raw ripe fruits is excellent; this will tend to keep the bowels in good order, which is extremely necessary, all through the period of gestation. A constipated condition of the intestinal tract will favor congestion in the pelvic organs, and predispose to difficult labor. If vegetables are well digested, these may be taken in limited variety for dinner, provided they are well cooked, and prepared with very little seasoning. As a rule, fruits and vegetables should not be eaten at the same meal; though fruits of the citric variety, as oranges and grape fruit, do very well with vegetables. Tea and coffee, and stimulants of every kind whether in food or drink, should be avoided; also highly-seasoned dishes, rich foods, meats, pastries and the like. The simpler the diet, the less liability there will be to inflammations, not only in the alimentary tract but in the pelvic organs.

Drinking daily a sufficient amount of pure soft water, this to be taken away from the mealtime, will help to cleanse the system and purify the blood; it will stimulate the depurators to greater activity, and promote healthy action in every part of the body.

As explained in a previous chapter, the diet of the prospective mother should not contain too much *bone-making* material. It should consist largely of raw ripe fruits (the subacid varieties are best), a limited amount of fresh nuts, and rather a small per cent. of cereal products. Most women eat too much bread, cake, pastries, etc., which incline to make bone rather than other tissues. This renders the bones, not only of the mother but also of the infant, hard and unyielding; not soft and pliable as they ought to be to secure an easy labor. The mother should regulate her diet in this respect, all through the period of gesta-



tion. The free use of pure soft water (this being the best solvent there is), will also be highly advantageous. Hard limestone water, and earthy materials of whatever kind, as bicarbonate of soda, magnesia, etc., will have a most deleterious effect.

The use of meats, gravies, highly-seasoned dishes, pastries, cakes, confections, etc., and especially white-flour bread, will not only make the blood impure, beget a constipated condition of the bowels, and otherwise derange the system, but it will predispose to inflammatory conditions, and to a great variety of diseases, local and otherwise.

Breathing plenty of pure air night and day, is next to indispensable; when the lungs are well supplied with oxygen, carbonaceous matters are removed from the blood, and the system is better able to ward off disease. The woman who has worn a corset habitually for a number of years, is really in no condition to bear children; the muscles which favor full breathing are weakened, perhaps *subparalyzed*; the blood is not properly purified, and the materials in it are not suited to the needs of the foetus. To give birth to a child, every part of the system should be in good working order.—But what are we to do? Nearly every girl, even in obscure country districts, is living in snug clothes or a corset; her skirts hang on her hips, pulling down the abdominal contents, and these in turn press upon the pelvic organs, congesting and displacing them.

During the period of gestation, the *sitz bath* (see page 384) will be highly beneficial. In some cases however, where the health of the individual is perfect, and the dietetic and other habits are *strictly normal*, the use of the *sitz* may be limited to the last three or four months. A good time to take it, is just before going

to bed; have the water as cool as is comfortable to sit in, and deep enough to come well up over the abdomen. Continue the bath from twenty to thirty minutes; it may be taken every day, or every other day, until the period of gestation is ended. For most women however, it is better the last three months to take the sitz every day. After the bath dry well with a towel, and follow with good hand rubbing till the skin is in a glow. Over the lower part of the abdomen, rub from *below upward*; never in the opposite direction.

Where the nipples are not well developed, rubbing them daily between the thumb and finger will be an advantage, having the fingers slightly oiled. If the nipples are at all sensitive, apply a little tannic acid from time to time; the acid may either be used dry, or dissolved in hot water.

All through gestation, the *bowels* should receive special attention; if they become constipated, this might lead to a very painful labor with serious complications. But where the food eaten is of the right kind and taken in moderation, there will usually be little or no trouble in the intestinal tract. An excellent plan is to live largely on raw ripe fruits, for two or three weeks before labor begins; also to use the syringe pretty freely, if there is the slightest tendency to constipation. Keeping the bowels absolutely free from day to day, right up to the time of confinement, together with the use of the sitz bath, will do much to insure an easy labor; all the more, if a sufficient amount of active exercise is taken, and the circulation kept *well balanced*. Serious (not to say fatal) hemorrhages, either during labor or afterward, are not likely to take place if the system is kept in good condition.

Many women make a great mistake, in housing up

too closely. Unless very much disabled (which should not be the case if the health is reasonably good), the woman should be actively on her feet up to the very hour that labor commences; she should also be *out of doors* as much as possible. In all those cases described in the last chapter, in which the labor was practically painless, the individual took *plenty of exercise daily*. She did not consider herself a semi-invalid, and spend half her waking hours either on the lounge or in bed. Some of these women did their own work, often looking after the needs of a numerous family. The exercise kept the blood moving in its vessels, and prevented congestions; it also tended to strengthen the muscles in every part of the body. The women who are laid up with swollen feet and ankles, perhaps during the greater part of the period of gestation, are either much too fat (already diseased), or they take so little exercise that the blood does not circulate freely. Where the woman is burdened with adipose tissue, the child too is usually over weight; and it presses upon the great bloodvessels in and around the pelvis, obstructs the circulation, and often causes rupture of the capillaries in the legs and feet.—Or if the *diet* has not been of the right kind, the blood may be filled with inflammatory material, the vessels containing it rupture easily, and *varicose veins* are the result.

To insure then an easy labor, the food must be of good quality, taken in moderation, and the woman herself must be reasonably active; otherwise the blood will stagnate in its vessels, congestions arise, and an endless amount of trouble will follow. By moving about energetically she keeps the blood coursing in the veins and arteries, the capillary circulation is good, and this

of itself will tend to prevent hemorrhage, either during confinement or afterward.

By dieting correctly, good muscular tissue is developed; the woman will not grow enormously fat, causing an excess of adipose tissue in the abdomen and elsewhere; the genital tract will not be encroached upon by a superabundance of fat, thus filling up the parturient canal until there is no room for the child to pass. The infant itself will be not too large; fat mothers and big babies, have much to do in producing difficult labors. Proper attention to diet, exercise, etc., will prevent all this; and the complications that usually attend labors will be less frequent. Women have themselves to blame, to a large degree certainly, for the amount of suffering which they endure.

It is a fact greatly to be deplored, that with the advance of civilization habits of effeminacy creep in, and the race deteriorates. In this respect the women are usually the greater sufferers; they live indoors altogether too much, and give way to habits of luxury and idleness. In the more primitive states of society, men and women live more nearly on the same plane; the latter work out of doors, in the open air and sunshine, and their clothes are so constructed that little or no restraint is put upon muscle or limb. But with the progress of civilization, all this is changed; and here in America where we do nothing by halves, physical deterioration is going on much more rapidly. In England, the women are better preserved in many respects than they are in this country; they ride, walk, and exercise in various ways which tend to develop their muscles. Our women are becoming indolent; positively lazy, especially in cities and among the wealthier classes.

If we compare the women in *savage* and civilized life, the contrast will be much greater; the former are strong and robust, able to endure any amount of labor and even hardship, of which the civilized woman is utterly incapable. We need to go back to nature, in order to see just where we stand. Women under natural conditions, have in many respects more endurance than men; and they can therefore perform a service (in the sick room, for example), which men would not be equal to. It is only in so-called civilized and refined society, that women are emphatically the "weaker vessels." The very fact that women are intended to be the *mothers of the race*, is reason sufficient why they should be endowed with superior vitality.

Dr. J. H. Kellogg, a well-known modern writer, has asked the question, "Why is the American woman an invalid?" He remarks, that women are not naturally so much weaker than men—which is shown by comparing the women of civilized and barbarous tribes; and he gives the following examples to prove the statement. Stanley, he says, informs us that the best porters he found in Africa, were women. A traveler in the Alps made a geological collection, and called for a porter to carry his load of specimens. He was told that he would have to employ a woman, as no man would undertake it. This he did; the load was lifted by *two men*. and poised upon the head of a sturdy woman, "who marched up the steep mountain paths over the pass, and down on the other side without injury to herself or her burden."—An explorer in the Northwest, was accompanied by a number of Indians; but when they were about to start, an old chief remarked that they must have some squaws to go along and drag the baggage. The men had not sufficient endurance to perform the task.

The women of Tasmania, when that country was first discovered, were much more nimble and enduring than the men. For example, a woman would stand upon the edge of a cliff many feet above the sea, and seeing a fish would dive into the water and catch it with her hands. Or she would climb a tall gum tree with a bare trunk from seventy-five to one hundred feet, and catch opossums in the top with the agility of an ape or squirrel.—“Travelers in Patagonia tell us, that the women of that country are almost equal in size and quite equal in endurance to the men;” and the same is true of most savage tribes.

Dr. Kellogg believes, that women have naturally as great vitality as men; and that it is only because of incorrect and enervating habits, that they have come to be regarded as the weaker vessels. He states that in civilized life, the strength of the average woman is just *half* that of the average man—as shown by test experiments carefully made. The *reason* for such degeneration, he says, is that “Women live much more indoors than do men. The indoor life with the numerous artificial and unwholesome conditions which it imposes, is a powerful factor in lowering the vitality, diminishing the power to resist disease, and besides, maintaining a continual contact with conditions productive of disease.”

He further remarks, that the human constitution is naturally so hardy that it endures the unwholesome conditions of civilized life, better than almost any animal which could be selected. A cow shut indoors as most women are, usually dies of consumption in four or five years. Monkeys and most other wild animals deteriorate rapidly in captivity, because they are deprived of the fresh air and sunshine to which they are naturally

adapted. This writer declares that sedentary and indoor lives, are largely responsible for the almost universal invalidism among women.

*Muscular exercise*, he says, is essential for health. The habitual use of the *corset* weakens the muscles of the trunk, and gives rise to displacements of the internal organs. Scarcely a woman twenty years of age can be found, who is not suffering from the displacement of some important organ or viscus. "The stomach is an inch or two lower than it ought to be. One or both kidneys are more or less displaced." The young women of the rising generation "do not compare with those of the generation preceding them." This fact is apparent to every observing physician. Neither will the downward tendency be checked until women appreciate the importance of health culture, and the necessity for a good physique, in order to perform the duties of wife and mother.

The same writer assures us, that "The average woman is scarcely better prepared to pass safely through the perils of motherhood, than to undertake a boxing bout, or a trip to the polar regions." Femininity alone, he says, does not qualify a woman for motherhood. Good digestion, a vigorous liver, strong muscles, steady nerves, and pure blood, are essential conditions for the welfare of the mother, as well as of the child. Women should give more attention to the cultivation of personal health, and the observance of health principles in their homes. "Simple food, eaten with reference to health requirements and not as a means of pleasure chiefly; some hours of appropriate exercise outdoors every day; proper clothing day and night; sleeping under conditions which permit the constant breathing of cold air; conservation of vital energy; the

avoidance of all extravagant and unnecessary expenditures of nerve strength and vitality in fashionable dissipation or in other ways;—*these* are a few of the essential methods by which women may conserve their health, and may help to stem the rising tide of degeneracy which is hastening the race toward sure extinction.”

For definite rules that apply specially to the prospective mother, the reader is referred to the following chapter. These rules are briefly stated, and in language that can be readily understood.



## CHAPTER VIII

### RULES TO BE OBSERVED IN PREGNANCY

It will be seen from the preceding chapters, that the writer of these pages is not alone in the belief that most women of the present day, are in anything but a suitable condition to become mothers. Their early training and education have not fitted them for the duties of maternity; their habits of life, from childhood to maturity, are at variance with its requirements.

Take the first woman you meet, whether in the city or some country place, and what is her *condition* physically? Can she breathe deeply and without restraint, expanding her chest three to four inches at every full inspiration? Are the throat and lungs free from disease; or shall we find various disorders in the respiratory tract? Does the skin perform its function normally; or has it become so clogged up that the other organs of depuration have extra work to do? Does the blood circulate freely in every part, giving her warm hands and feet, and securing the glow of health over the surface of the body? Are the bloodvessels free from disease; or would a careful examination reveal the fact that their inner walls are becoming sclerosed, and that sooner or later the blood will be obstructed in its passage through them? And what about the heart; are its valves in fine working order; or do they show signs of giving out?

Has she strong and vigorous muscles, which enable her to walk a mile or two or three without being weary? Are her digestive organs doing good work, so that the food is properly assimilated, and *pure blood is made*? Is she a stranger to headaches; and are all the great nerve centers free from congestion? Are her stomach and bowels occupying the place that nature intended they should, giving the abdomen a plump rounded appearance, such as we see in a healthy child? Or is the stomach pulled away from the diaphragm, the mass of the bowels sagging beneath, thus leaving a great hollow just below the waist line?

Is the liver performing its function properly; or has it been saturated with calomel and other cholagogues, producing a pale and sallow skin, through which the blood circulates feebly in the capillary vessels? Are the kidneys performing their functions normally; or is there incipient Bright's disease? Do the bowels move freely and of their own accord; or is there a sluggish and constipated condition of the intestinal tract? Is the rectum sound and healthy; or have pile tumors developed with other complications? Are the pelvic organs, one and all, in normal position; or shall we find the uterus prolapsed or otherwise displaced? Are there *pelvic congestions*, causing pressure upon the bloodvessels, and making a deal of trouble? Is the function of menstruation such as nature intended it; has the flow become too scanty or too profuse? Does the woman suffer with pain at her monthly periods; and is she often next thing to hysterical?

The young woman who is relatively free from the diseases and abnormalities above enumerated, may congratulate herself that physically she is fitted for motherhood. She has been properly reared and trained, and

is in the enjoyment of good health. It is for such a woman that the following directions are given; though there are others less fortunate, who might be greatly benefited by observing them.

FIRST.—As soon as the wife knows she is pregnant, both she and her husband should be temperate in all things, and especially in regard to their *sexual* relations. No considerate husband will want to sap the vitality of his wife during gestation, and interfere with the perfect development of his child.

SECOND.—The habits of the mother should be *active*; not materially changed from what they have been before. She should live much out of doors, and exercise freely in the open air and sunshine. Walking, riding, sailing, rowing, whatever form of recreation she has been accustomed to, may be continued with little or no interruption. The rule is, to take the exercise at frequent intervals, and not continue it to the point of exhaustion.

THIRD.—Avoid any movements that are unnatural; such as reaching high above the head, or doing anything which will put the muscles on a strain. Where a woman does her own work or a part of it, in and around the house, not so much *other* exercise is needed; though she should not confine herself to indoor occupations, nor make of them a drudgery.

FOURTH.—Study at all times to maintain a buoyancy of mind and body, which is usually an indication of good health and spirits; and even under circumstances that are rather adverse, endeavor to be contented and happy. Cultivate the habit of looking on the bright side of things.

FIFTH.—Should some accident occur which would tend to shock the nervous system, it is the duty of the

mother to brace herself against it; she should not give way to excessive grief or other emotion, and injure the unborn child.

SIXTH.—Whether indoors or out, the woman should so robe herself from head to foot, that no restraint will be put upon either limb or muscle; this is of the *utmost importance*. A union undersuit, a light skirt hung from the shoulders, and a princess wrapper, are about what is needed, regulating their weight to suit atmospheric conditions. The body should be as free to expand, as if there were no clothing worn. Let the air circulate freely between the skin and the garments. Even the shoes (with low heels, or none at all) should offer no obstruction to the circulation of the blood in the feet and ankles.

SEVENTH.—See that the bowels move regularly each day, keeping the intestinal tract free from obstruction. To secure this, go to stool at the same hour every morning; sit in relatively a passive state, and do not strain.

EIGHTH.—The character of the *diet* will have much to do with the free movement of the bowels. Live largely upon raw ripe fruits; as apples, peaches, cherries, grapes, plums, etc. If (as in winter) these cannot be obtained in the raw state, then use them canned or dried.

NINTH.—In the preparation of fruits, either canned or dried, or in the raw state, very little sugar is needed; only enough to make them as sweet as they are when thoroughly ripe. Dried apples, peaches, apricots, etc., are often better without any sweetening whatever. Using much sugar, has a tendency to constipate.

TENTH.—The *staples* in diet should be fruits, cereals (these in limited quantity), a moderate supply of fresh nuts, and vegetables plainly prepared. Have few

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varieties at a single meal, making the changes from one day to another. Serve the meals at stated intervals, and be careful not to overeat.

**ELEVENTH.**—The cereals, whether in bread, mushes, or other preparations, should be very thoroughly cooked. Serve the mushes with fruit or fruit juice, and eat them with crusty bread or dry toast, to insure thorough mastication.

**TWELFTH.**—As a rule, fruits and vegetables should not be served at the same meal. The citric varieties however, as oranges, lemons, grape fruit, etc., do well with vegetables. The other fruits, as apples, peaches, grapes, etc., are excellent served with cereals.

**THIRTEENTH.**—Meats should be eaten sparingly, if at all. Fresh nuts will take the place of meats, and are much more wholesome; though only a limited quantity of them should be used at one time. A good plan is to eat them with bread, dates or raisins, and at the commencement of the meal.

**FOURTEENTH.**—Plain vegetables if well digested, may be served at dinner. Care should be taken however not to have too many kinds at a single meal.

**FIFTEENTH.**—Soups if eaten, should be thoroughly masticated; serve them with crusty bread or dry toast. Foods are better digested when there is not too much of the sloppy varieties. In selecting for a meal, it is well to combine the solid with the more juicy kinds of food. For example, sweet potatoes and tomatoes make a suitable combination; one is rather solid, the other juicy; the one is sweet, and the other acid.

**SIXTEENTH.**—For some individuals, two meals a day are better than three. If suppers are eaten they should be light, both in quantity and quality, and served at an early hour.

TWENTY-FOURTH.—Keep the skin clean at all times. The amount of bathing required, will depend somewhat upon the strength of the individual. For those who are not very strong, a simple sponge or towel bath taken in the morning on rising, or midforenoon, may be all that is needed; while those who are more robust will prefer a tub bath. In either case, follow with good hand rubbing after drying with a towel. Always be careful to leave the feet *dry and warm*. The temperature of the room in which the bath is taken, should be comfortable. It is also a good plan to expose the whole body to the air, for at least ten or fifteen minutes after the bath.

TWENTY-FIFTH.—The frequent use of the *sitz bath* (see page 384) is of prime importance. This is particularly true toward the end of gestation; and some mothers are greatly benefited by employing it from the first. It may be taken every day, or every other day, and continued from twenty to thirty minutes. After the bath dry well with a towel, and follow with hand rubbing. Over the region of the pelvis and especially in front, rub *from below upward*. Place the hands above the pubes, and rub upward and outward till the skin is in a glow. These movements will tend to keep the pelvic contents from sagging.

TWENTY-SIXTH.—Some women speak of being *uncomfortably warm* through the pelvis and abdomen, especially during the last few months of gestation; the child's body is increasing in size, and its heat is communicated to the mother. Where the heat seems excessive, the *sitz*, or even the full bath, may be employed more frequently. Or if the heat is greater at night, a cool wet compress may be worn over the abdomen, covering it with a single thickness of dry flannel. The compress should be changed before it gets dry; and on

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removing it, sponge the parts with cool or cold water. If sufficient care is exercised, both as to the quantity and quality of the food eaten, there will be less trouble with heat. In very warm weather, no more clothing should be worn than is necessary for comfort.

**TWENTY-SEVENTH.**—The state of the *mind*, whether in health or disease, has often much to do with physical conditions; and it is well for the pregnant woman to remember this fact. It has been truly said, that one way to secure an easy labor, is for the woman to make up her mind that it cannot be otherwise; that having observed the necessary rules the labor must of course be normal. A happy and cheerful disposition on the part of the mother, right up to the hour of confinement, is of the utmost importance. Worry and needless apprehension, make much trouble.

## CHAPTER IX

### PARTURITION

If every woman were in a strictly normal condition, the act of bearing a child would be neither difficult nor complicated. Crantz, in his History of Greenland, says: "As we remove women from a state of simplicity to luxury and refinement, we find that the powers of the system become impaired, and the process of parturition is rendered more painful." Where the habits are simple and natural, women in all climates bear their children with ease, and recover speedily. This author remarks, that "The Greenlanders, mostly, do all of their common business, just before and after delivery; and a still-born or deformed child is seldom heard of." Another gentleman, who has been among the North American Indians, states that as soon as their women bear a child they go into the water and immerse it; which is done in order to make their children strong. This man asked an Indian where his wife was; he replied, that he supposed she had gone into the woods to set a trap for a partridge. In about an hour she returned with a newborn infant in her arms, and coming up to the stranger she said in Chippewa, "Here Englishman, is a young warrior!"

Winterbottom tells us that "with the Africans, the labor is very easy, and trusted solely to nature, nobody knowing of it till the woman appears at the door of the hut with the child." The Shangalla women, says the



traveler Bruce, bring forth children with the utmost ease, and never rest or lay by after delivery. They wash themselves and the child with cold water, "wrap it in a soft cloth made of the bark of trees, and hang it up on a branch, that the ants with which they are infested, and the serpents, may not devour it." Dr. Beach, in his work on Midwifery, states, that in Otaheita, New South Wales, and other islands of the South Pacific, parturition is easy. He believes that the suffering which the women of civilization endure, is caused by "errors in diet, want of exercise, tight lacing, and other fashionable vices."

The writer of these pages cannot of course enter into all the details which are necessary to describe parturition, as it occurs in civilized life. In this chapter an attempt will be made to outline the parturient process, as seen in a so-called *normal* labor at the present time.

The period of gestation, as a rule, continues about 280 days, or 40 weeks after conception has taken place; though cases are met with, in which there is considerable variation as to time. Instances are on record, in which gestation has been very much prolonged; this, however, is exceedingly rare.

What is spoken of as labor, is by most writers divided into *three stages*: In the first, complete dilatation of the os uteri takes place. In the second the efforts are expulsive, this stage ending with the birth of the child. In the third the placenta is expelled, and the uterus being completely evacuated, *contracts*.

Among the *symptoms* of approaching labor, may be noticed a subsidence of the abdomen—a diminution in its size. This is chiefly due to a sinking of the cervix uteri and its contents into the brim of the pelvis. The symptom when present is a favorable one, because it in-

dicates that there is plenty of room in the pelvic cavity.

For several days before labor begins, some relaxation takes place in the external parts, this producing more or less tumefaction of the vulva. Another sign that labor has commenced, is a slight discharge of mucus from the vaginal passage, which is often tinged with blood. The discharge here spoken of, is what the nurses call a *show*; it indicates that there is some little dilatation of the os uteri, and also a descent of the foetal membranes. With the average woman, labor usually begins with pain; but it may make considerable progress without any pain whatever. Exceptionally, the os uteri is fully dilated before any painful sensations are felt.

During the latter part of gestation, what are termed *false* pains will sometimes make their appearance. They are often neuralgic in character, and are apt to be mistaken for true labor pains. They may come on in the night, or almost any time; and not unfrequently they disappear about as suddenly as they came. The woman imagines that labor has commenced; but after the pain ceases she discovers her mistake.

Labor pains proper, are of *two kinds*; they are different in character, and mark the first and second stages of parturition. When the os uteri begins to dilate, the pain felt is described as grinding or cutting. Often the woman shivers, as if in a chill, but it is simply nervousness; sometimes too there is nausea with vomiting. These pains occur at regular intervals; though early in the first stage they may be half an hour apart. In some cases they take place much more frequently, especially as the labor advances—it may be as often as every five minutes. As a rule the pains in the second stage of labor are stronger, and recur at shorter intervals. They are accompanied by forcible bearing-down efforts,

and the woman expresses her sense of pain in a much graver tone of voice. If the second stage is greatly prolonged, the patient may doze between the paroxysms.

The period of time during which the os uteri is dilating, is termed the *first stage* of labor; it may be longer or shorter, according to the conditions that are present. In about ninety-six out of every hundred cases, it is the head that presents; this with the bag of waters acts as a wedge, and greatly facilitates the dilatation of the os. In fact, all other presentations are considered abnormal; if the soft parts of the foetus present, the pressure in the cervix is not so great, the os dilates slowly, and labor is retarded. It is therefore most fortunate, that presentations other than the head are seldom met with.

In the first stage the os should be soft, moist and pliable, and its temperature scarcely above the normal. With each pain the cervix grows tense, the border becoming thinner and sharper. Usually there is an abundant secretion of mucus. The *duration* of this stage, may vary from two hours to several days; with a first child, twenty-four hours is not uncommon. As a general thing it increases with the patient's age, and may last from thirty to forty hours. Some writers give the average as fifteen hours in the primipara, and eight hours in the multipara. But there are wide variations in different cases. Occasionally, both the first and second stages are of short duration. Very much however will depend upon the physical conditions of the woman at the time.

As the mouth of the womb dilates, the membranes which enclose the foetus and the *liquor amnii*, protrude through the os. These membranes with their fluid contents, are termed the "bag of waters." The latter has a special function to perform; at every expulsive effort

the bag protrudes, acting as a wedge to dilate the parts. In most cases it takes some time to accomplish this, particularly in a first labor; all the more, if the tissues are hard and resistant (like a cord), instead of being soft, moist and pliable. It is owing to such gradual dilatation of the mouth of the womb, that serious lacerations are prevented. For this reason, the bag of waters should not usually be ruptured until after the os is well dilated; though sometimes it ruptures of its own accord. The uterus then contracts firmly on the body of the child, and labor as a rule advances rapidly to its completion. It is an axiom in obstetrical practice, not to unnecessarily destroy the cyst or bag of waters; as long as any advantage can be obtained by its presence in dilating the os, it should remain intact. There are cases, however, in which interference is justifiable; perhaps the membranes contain an abnormal amount of the *liquor amnii*; and though the parts are well dilated, the membranes and their contents cannot pass. In such an event it is best to rupture them; the forcing efforts will be very much improved, and the labor expedited.

After the os uteri is fully dilated, the *second* stage of labor begins. The foetal sac having sunk low in the pelvis, the head rests upon and distends the soft parts of the mother, this forming what is termed the *perineal tumor*; the bag of waters may or may not have been ruptured, when the head passed through the os. Labor having progressed so far, the expulsive efforts are renewed with increased energy; they last longer, and are more severe. These contractions are attended with bearing-down efforts on the part of the mother. It is just here, that the abdominal muscles are brought powerfully into play; if these are weak and flabby, the labor will not advance so rapidly.

When the head reaches the floor of the pelvis, it sometimes meets with considerable resistance; the perineal tissues instead of being soft and moist, easily dilatable, are hard and unyielding. In many cases the expulsive efforts have to be renewed again and again, until the perineal tumor has overcome the resistance of the tissues, making it possible for the head to be expelled. It will be noticed that the uterine contractions take place intermittently, and at regular intervals; and if the conditions are strictly normal, the foetus will continue to descend and labor progress. In this stage the character of the *pain* changes; the woman steadies herself by pulling hard on a sheet arranged for the purpose, or by grasping the hand of an assistant; she takes the semi-recumbent posture, and strains vigorously to facilitate the expulsion of the foetus. With each pain the pelvic floor bulges, and then recedes; the vulvar opening gaps, and the head can be seen. This process may be repeated over and over again, until finally by a supreme muscular effort, the head is born. Sometimes there is a pause of from one to five minutes before the *body* emerges. The duration of the second stage may vary from ten minutes to six hours. In primiparae the average is two hours; in multiparae, one hour.

The *third* stage of labor, is that in which the placenta is extruded. In some cases, the contractions which expel the foetus, will also bring away the placenta. Oftentimes however it is either partially or wholly detached, and remains in the uterus or vagina, whence it is soon thrust out by the uterine contractions; or it may be aided by very gentle pulling upon the cord. The interval that elapses after the child is born, until the uterus contracts to throw out

the placenta, may vary from five minutes to an hour, according to the fatigue which the organ has undergone. If the afterbirth does not come away, say within an hour, it is a *retained* placenta—to be spoken of elsewhere.

So much, by way of mere outline, in describing the parturient process. Let us now go back to the end of gestation. As soon as the woman realizes that labor has commenced, both the bowels and the bladder should be *thoroughly* evacuated; this will give more room for the foetus to advance, and at the same time prevent any unpleasant complications, owing to discharges from the bladder or intestines. If however the mother has been very careful in the matter of diet, and especially as the period of parturition approaches, the intestinal tract will be relatively free. But in any case, both the bladder and bowels should be *emptied* before labor has made much progress.—If the first stage of labor is inclined to linger (which often happens in primiparae), the rectal injection may have to be repeated.

In the meantime, the nurse should have ready such appliances as will be needed during the labor; a wash basin, hand brush, soap (antiseptic), water, some clean towels, scissors, and a ligature for the cord; a suitable material for tying the latter, is narrow linen tape. There should also be provided plenty of clean sheets and towels, and one or two pieces of unbleached muslin for abdominal binders if these are used; the pieces may be half a yard in width by one and a quarter in length. Have ready two rubber sheets to cover the bed, a rug or oilcloth to protect the carpet, safety pins, a fountain syringe, a suitable bed-pan, a supply of hot and cold water (sterilized by boiling), a pack-

age of borated cotton for the navel dressing, the child's clothing, and a blanket for wrapping it. These articles (except the child's clothing), should be recently sterilized by steam or dry heat, for a sufficient time to render them surgically clean.

The preparation of the *bed* must not be delayed too long. Have it so placed that both sides are accessible; and arrange for the patient the side of it that will enable the physician to use his right hand. The bed should be a *firm mattress*; never a soft couch of any kind. Lay over this a rubber sheet, large enough to cover the entire width of the bed, and the greater part of its length. On top of the rubber spread a soft comfortable (clean of course), and cover the latter with a clean sheet, pinning all fast to the mattress. Over these a *second* rubber is sometimes laid, this being covered with a bed sheet. The last two are withdrawn after labor, leaving the bed clean, and protected by the first rubber and its coverings. Two or three clean sheets, each folded to four thicknesses, may be placed across the bed to receive the discharges.—In place of the sheets a good absorbent dressing is a pad, specially made for the purpose. It consists of a cheesecloth sack or bag, filled with jute, absorbent cotton, cotton waste, or other suitable material that has been previously prepared and sterilized. The sack should be from two and one-half to three feet square, and three or four inches thick; a good plan is to sterilize by steaming for an hour, shortly before using it. The entire dressing of the bed should be strictly clean.

## CHAPTER X

### PARTURITION—CONCLUDED

In a perfectly normal labor, this being free from complications, there will not be much for the accoucheur to do; the less he interferes with the natural process of parturition, the better it will be for both mother and child. What is termed "meddlesome midwifery," has been the cause of much suffering to women; and all later writers, or at least the more intelligent of them, do not hesitate to condemn such a practice.

When called, about all the obstetrician has to do, especially in the earlier stages, is to ascertain by a careful examination how far labor has progressed, and to see if the presentation is favorable. In doing this, he should irritate the parts as little as possible, and leave Nature to carry on the work. It is only when she fails to accomplish the end in view, that manual or other interference is necessary. If the labor progresses slowly help the woman into a good warm sitz bath (see page 384), and let her remain in it from twenty to thirty minutes, or as long as she is comfortable. This bath timely administered, will often greatly facilitate the parturient process. Sometimes, when the labor is considerably advanced, it may be impossible to give the sitz. In that case, wring cloths from warm or hot water, and apply them over the vulva and lower part of the abdomen; the temperature should be that which is most agreeable to the patient.



Simply turning the woman from side to side, or helping her up to the vessel, will often change the position of the foetus, and make labor progress more rapidly. In the earlier stages, the patient if she can do so may keep on her feet, and walk about the room; her own feelings in this matter will usually be a good guide. Or if not able to walk, have her turn from side to side in the bed between pains; there is no danger whatever in her doing this, provided she feels so disposed. Some mothers who are very helpful, and comparatively free from pain, scarcely lie down at all until labor is well advanced. The writer has known repeated instances in which the child was born with the mother on her feet, or leaning over the back of a chair.

The act of moving around, provided it can be done with ease, tends not only to facilitate labor, but to keep the unborn child in normal position. It may be stated in this connection, that in head presentations (which are by far the most frequent) the long diameter of the head lies at the beginning of labor in the long diameter of the superior strait; but as labor progresses and the head descends, it describes a quarter of a circle; so that when the head reaches the perineal outlet, its long diameter will coincide with that of the inferior strait. The head assumes this position in all *normal* labors; and when the mother can move about freely, even in the second stage, the rotation of the head here spoken of will often be greatly facilitated.

As to the best *position* for a woman to take when the child is about to be born, this too is in most cases a matter for the mother herself to decide; she can assume almost any position that affords the most comfort. Oftentimes, she is inclined to change frequently, sitting, lying, walking, and even kneeling. Usually

however when labor is pretty well advanced, the woman wants to lie on her back, with the knees flexed and the hips somewhat elevated. Moreover, she endeavors to *aid* muscular contraction, either by pushing against something with her feet, or pulling with her hands. A good way is to place a padded stool at the foot of the bed, so that she can push against that with her feet. To aid her in pulling, tear a strip of muslin ten or twelve inches wide (or twist an old sheet), tie it around the foot of the bed, and leave it the proper length for a good purchase; the woman can grasp it with her hands, pulling and pushing at the same time. Where no such arrangement has been made, the mother seizes the hand of the nurse or assistant, and endeavors to help herself in that way.

When the expulsive efforts are intense, it is natural for the woman to try to do her part. Even the Indian mother, who as a rule suffers but little, will do this; among some tribes, when labor commences she retires a short distance from the cabin or wigwam, to a *lodge* which is always in readiness. Here she lies down on her back, and grasps a pole which is placed horizontally over her; it extends from the head to the feet, and is securely fastened to two stakes in the ground. When a uterine contraction begins, the mother seizes the pole and raises herself up, continuing in this position until it ceases. Among the Indians (some of them at least), no one is allowed to be present at the birth; should an Indian venture too near the lodge it is deemed *sacriligious*, and the tribe would not expect good luck to follow them in hunting. There is one exception however; if the woman in labor becomes alarmed, she utters a *whoop* as a signal, and some elderly squaw goes to her assistance. A short time after the labor is

completed, the woman washes herself and child in a stream near by, and returns to her cabin. The babies are washed in *cold* water, in order to make them strong.—It must be said, however, that labor as it usually occurs among civilized women, is not exactly ideal in character; there are numerous variations from the normal standard. For example, in most cases there is a good deal of physical suffering, especially toward the last.

Where severe pain is felt in the second stage of labor, the patient may ask you to support her back by firm *pressure* made with the hand; this will enable her to bear the pain more easily. As the head of the child is forced against the perineum, the expulsive effort may have to be restrained, in order to give the tissues time to dilate, and thus avoid rupture. A method often resorted to by the physician or midwife, is to make pressure upon the head as it advances, and restrain the propelling force. Quoting from a modern writer, the thumb and fingers are held against the occiput to keep it back. "With the thumb applied to the head immediately in front of the tense border of the perineum, and with two fingers resting upon the occiput, the rate of descent is easily watched and regulated." Both hands should be employed. As soon as the head passes out, the *cord* should be felt for; it may be wound around the child's neck (two or three times perhaps), and any strain upon it might obstruct the circulation. Occasionally the cord is found knotted, and if the knots were tightened, the foetal circulation would be interfered with. Where the body is not expelled soon after the head emerges, slight traction may be made by placing the finger in the armpit.

Immediately after the head is born, the nurse (or

attendant) should receive it in her hands, and support it until the shoulders are expelled. This will usually take place in a few minutes; but not until the body of the foetus has made another quarter of a revolution, which will bring the long diameter of the shoulders into the long diameter of the outlet. After the body is expelled, lay the infant on its right side, and as far as possible from the mother without stretching the cord; it must be well covered, and placed so it can breathe easily. Very soon after the child is born, the hand of the physician (or the nurse) should be placed over the abdomen of the mother and gentle pressure made, to discover whether another child is still in the uterine cavity. It is also a good plan to grasp the womb through the walls of the abdomen, and make firm pressure for a few moments; this will help to secure contraction of the uterus, and expel the placenta. Often the expulsive effort which removes the later, will not take place for some little time, particularly after a severe labor; it may be half an hour or longer.

Meanwhile, examine the infant carefully; see if it is perfectly formed, and also cleanse its mouth of mucus. Usually the little one utters a cry as soon as it is born, showing that its lungs are filled with air. If it does not cry, but breathes feebly or only gasps, dip the hand in cold water and lay it on its chest; or you may sprinkle a little cold water from a basin. This is generally sufficient to start the respiration. Should it fail however, turn the child head downward for a moment, and also wrap hot flannels around it. If its face looks purplish, put the infant into a warm bath having the temperature a trifle below blood heat, and keep it in the water for several seconds. On lifting

it out of the bath, cold water may be dashed upon the chest. Should the means suggested not produce the desired effect, *artificial* respiration may be resorted to; several methods are recommended. One of the simplest is to lay a thin towel over the child's mouth; then after taking a deep inspiration, quickly but gently blow into it, and immediately compress the chest to force the air out. In this way the infant's lungs may be inflated and emptied, ten or fifteen times a minute. If there is need, continue the process for some time; cases are on record in which the child has been resuscitated, after being apparently dead for an hour.

When breathing is fully established, the cord may be ligated. The practice now generally observed, is not to tie the cord till pulsation in it has ceased; and some physicians wait until after there is *firm contraction of the uterus*. The cord should be ligated on the maternal, as well as on the foetal side. A good rule is to tie first about two inches from the child's body, and again about three inches; this done, cut between the knots. The cord should never be tied so tight as to cut into the tissues, nor so loose as to permit bleeding. As soon as the lungs are filled with air and the cord is severed, wrap the infant in a warm flannel or receiving blanket. Then cleanse both the eyes and the naval with sterilized water, and wash them with a three per cent. solution of boric acid. The *bath* may be deferred for a time, as the new-born infant is easily chilled. Anoint the little one from head to foot with olive oil or vaseline, removing most of it with absorbent cotton, and avoid rubbing the skin too vigorously; the room should be comfortably warm. Lay the child, well wrapped, either in its own crib, or in bed not too close to the mother.

It should never be forgotten that the mother cannot be left with safety, even for a short time, until after the placenta has been expelled and the uterus is *firmly contracted*. If that organ is in a relaxed condition, a severe hemorrhage may occur at any moment. Place the hand over the abdomen, making slight pressure; and if the uterus is well contracted, it can be felt like a hard ball about the size of the fist, beneath the abdominal walls. Even so contracted, relaxation may very soon take place, and the woman if not watched may bleed to death. If the womb feels loose and flabby to the touch, lay a *cold* wet compress over the abdomen; in some cases, ice may be required. Or a vaginal injection of cool or cold water will have a good effect. Rubbing the skin vigorously over the lower abdomen with a stiff clothes brush, will often make the uterus contract. But whatever you do, see that the *feet and hands* are comfortably warm. This is of the utmost importance, where there is the least tendency to hemorrhage. Sometimes the uterus will promptly contract with the application of cold, but in five or ten minutes it relaxes again. Very much will depend upon the general condition of the individual; we must study the nature of the case, and keep close watch of it.

After the immediate needs of the mother and infant have been provided for, the nurse should remove the soiled clothing from the bed. The lower rubber sheet and the cotton one above it may be left in place for two or three days or longer. A *draw-sheet* placed under the patient's hips, will protect the bed; it consists of a common muslin sheet folded to four thicknesses. This may be replaced by a fresh one as often as it is soiled. Instead of the draw-sheet some prefer

an aseptic pad, large enough to receive the lochial discharges, changing it as needed. One of the first things for the nurse to do, is to cleanse the soiled portions of the mother's body, using tepid sterilized water, or an antiseptic solution. If necessary, the body linen should be changed. For bathing the genitals, use a piece of fresh boiled cheesecloth or toweling; a sponge is not suitable, as it is hard to clean. After washing the parts, cover the vulva with an aseptic dressing; a fresh laundered napkin may be used, or a "lochial guard" especially designed for the purpose. The latter is made of absorbent cotton, cotton waste, or prepared jute, enveloped in cheesecloth. The guards may be ten inches long, four wide, and two inches thick; tail pieces are sometimes attached for fastening to the binder. These dressings are best sterilized by steaming; or they may be baked in a hot oven. They are burned after using.

Many physicians do not recommend the *binder*—or abdominal bandage. A good deal will depend upon the condition of the abdominal walls; if they are very loose and flabby, a binder properly adjusted will sometimes afford relief. It is generally made of muslin, bleached or unbleached, one and one-fourth yards in length and about eighteen inches wide. If narrower it is liable to slip up, and is more like a rope around the body. It should be carefully made, nicely fitted to the trunk, and worn neither too tight nor too loose. The binder is usually dispensed with after one or two weeks.

The infant having been gently rubbed with olive oil or other unguent, there is no necessity for haste in regard to bathing. And in what is termed a "dry birth," the secretions of the mother may adhere so firmly to the infant's skin, that considerable time will

be required after the oiling, to loosen them. A child that is very *feeble*, should not be bathed with water for two or three days or longer. Even then, it is not a good plan to *immerse* such a child in the water. A better way is to sponge it carefully with old soft linen dipped in tepid water, bathing and drying one portion of the body before proceeding to another. Begin with the head and end with the feet, leaving the latter dry and warm. The best soap is pure white castile, this not to be used too freely. Have the water about blood heat. For the first few baths rub the skin very lightly, until the little one gets accustomed to the friction. One writer very justly remarks, that more harm than good is often done by too great thoroughness in the first bathings.

Where the mother has bathed freely all through gestation, using the tub bath at frequent intervals, the child will not be so sensitive to the water; some infants seem to enjoy an immersion from the very first. The duration of the bath ought not to exceed five or six minutes. On removal from the water, dry the body quickly by wrapping in a large soft towel. The scalp and ears, and the creases about the genital organs, should be dried with extreme care. Jewett remarks, that for the average child a full bath may be repeated daily in warm weather, and about every other day in the colder months. Cleanse the soiled portions of the body as often as needed; and pay special attention to keeping the scalp clean. The best time for the bath is in the morning, and midway between feedings.

During the first week, it is better to do the bathing a little at a time; the entire bath is too exhausting, for some children at least. It is an easy matter to



bathe the arms and chest one day, drying them well. Another day take the trunk; and the day following, bathe the hips, legs and feet. Dr. Stockham does not recommend a full bath daily, until the infant is two months old; and she would avoid bathing immediately after nursing. If a child has feeble vitality, you may now and then substitute an oil rub for the water bath. A seven month's baby, always small and delicate should be wrapped in soft cotton, and kept at a temperature of about 98°F. It should not be washed and dressed until it has grown stronger; even then, do not expose the child to cold drafts, producing blueness of the skin.

Before the cord falls off, as it usually does from the fourth to the sixth day, care should be taken to dry the part thoroughly, and re-dress the stump with boric cotton, after each bath. Some physicians think it is better to omit the daily immersion of the child in water, until the funic stump separates. Should any fetor develop, disinfect the parts with peroxide of hydrogen or other suitable material, before re-dressing. Dr. Jewett says that after the age of six months, the temperature of the bath may be lowered to 90° F. I will remark, however, that if the child is feeble, the temperature should never be very much below blood heat. After the bath, every part having been thoroughly dried, you may dust a little talcum powder or corn starch (some use flour slightly browned) under the arms, on the neck, in the groins, and about the nates—wherever the skin lies in a fold.

In dressing the cord, a good way is to apply a soft linen cloth about four inches square, this being smeared on the under side with mutton tallow, or a little olive oil; have a hole cut in the center of the cloth, through

which the cord is slipped. As to the belly-band, some recommend its use, and others do not. It is merely employed to hold the navel dressing in place, and serves no useful purpose after the navel is healed. It may be made of two thicknesses of fine linen; some prefer soft fine flannel; though in very warm weather the linen would probably be better. When applied, do not draw it too tight; and fasten with tapes rather than safety pins.

The diaper, made of cotton cloth sold for this purpose, is fastened (not too tight) with a safety pin. Small squares of old soft linen should be used inside the diaper the first few weeks, while the skin is tender. Dr. Stockham recommends dispensing with the *shirt*, which is hard to put on, and of little or no service. She would use instead an undershirt of very soft flannel, the garment being made the same pattern as the outside slip or wrapper, with long sleeves. It is buttoned in the back, and should be long enough to protect the feet. A more convenient way, however, is to have the garment in two pieces, the waist and sleeves in one part, and the skirt in another; then if the latter gets soiled it can be removed, without disturbing the waist and sleeves. Over this garment have another skirt, made of cotton for summer and soft wool in winter; it need not have sleeves. The outer garment is an ordinary slip or wrapper; this, like the others, should fasten in the back. In cold weather, soft woolen socks may be used from the first, changing whenever they get wet or soiled. All clothing for the child should be soft, warm, and easily adjusted; also light and porous. It is an excellent habit to sit with the baby near the fire or open grate several times each day, lift

the skirts, and give the legs and feet a good toasting, care being taken not to scorch them.

By the time the infant is three or four months old, the mother may teach it habits of cleanliness. Soon after nursing let her hold out the baby, and it can easily be taught to urinate at this time. By a similar management, it will also have a passage from the bowels regularly, in the morning and evening. This training will save the mother a deal of trouble, and keep the little one much more comfortable. As it grows older, it can be taught to use a chair.

Every mother should if possible, nurse her own child; it is only when the secretion of milk is deficient, or the woman is very feeble or actually diseased, that a wet-nurse should be employed. Besides, the sooner the infant is put to the breast, the better it will be for the mother herself. If there is a retained placenta, the act of nursing will promote uterine contractions and help to expel it. Where the uterus contracts firmly, there is very little danger of hemorrhage; there can be no bleeding to speak of, when the muscles of that organ contract properly. One of the best means of preventing "gathered breast," and also of securing a plentiful supply of milk, is to have the child nurse from the start.—The natural food for every infant, is that furnished by the mother; and to develop it correctly the child should not be deprived of this. There is really nothing that can take the place of the food which nature has provided.

A good precaution is to wash the nipples thoroughly, and also the mouth of the child, before it nurses; and some recommend washing both before and after. A practice formerly in vogue, that of giving the baby a little castor oil or senna tea, to "help carry off the

*meconium*," is not only unnecessary, but greatly to be condemned. It is bad enough to administer drugs to grown people; and to an infant that has never had a dose of medicine, it is the worst thing possible. Many a baby has been killed in this way. The mother's milk, the first secreted after the child is born, is specially suited to its needs. If the milk is slow in coming, give the baby a little warm water with a teaspoon. But the sooner it is put to the breast, the better for both mother and child; its efforts to nurse, will hasten the secretion of the milk.

There are women however who cannot nurse their babies; if the mother is in bad health, the milk may disagree with her child; or the secretion may be deficient in quantity. The thing to do in such cases, is to employ a wet-nurse; she should be in good health, and her child about the age of the one she is to nurse. If such a person cannot be had, the next best substitute is cow's milk, the calf being not more than a few weeks old. It has been discovered however that where the milk is obtained from several cows, its quality is generally better; the milk should always be as fresh as possible. But the constituents in cow's milk are by no means identical with those which are found in mother's milk. Quoting from Dr. Holt, "Cow's milk has a little more than half as much sugar; it has nearly three times as much proteids (curds) and salts; its proteids are different, and much harder to digest. Its reaction is decidedly acid; that of mother's milk is faintly acid, or neutral." It has therefore been thought necessary, by most physicians at least, to *dilute* cow's milk with one or two parts water, the proportion of milk being increased as the child grows older. Barley-water, rice-water, or oatmeal gruel very

thoroughly cooked and strained, is sometimes used in diluting the milk; though these substances are rather hearty for a very young infant.

An effort has been made to construct a *formula* of cow's milk and other ingredients, which shall render the food similar to mother's milk. What is known as the Rotch-Meigs mixture, is recommended by some physicians. This is composed of cow's milk, thin cream, water (boiled), milk-sugar, and lime-water; though the last-named ingredient should never I am sure be put into an infant's stomach. As crude a substance as lime will not only irritate the sensitive mucous membranes of the stomach and bowels, but have a tendency to break down the kidneys. The milk-sugar in the market often contains impurities, and may have to be fully purified by recrystallization before using it. Indeed, it is a very difficult matter, either to obtain the various ingredients absolutely pure, or to combine them in such proportions as shall meet the requirements of the child. Some infants thrive well on good cow's milk, one to two volumes, and pure water, one volume.

A mother may be so situated however, that milk of any kind is extremely hard to get, and a wet-nurse not to be had at all. Then the question arises, whether any of the *baby foods* in the market are suitable for infants. As a rule, these preparations cannot be recommended; though several of them have been used with pretty satisfactory results. No two of these foods are alike; and what agrees with one child, may fail to nourish another properly. Numerous experiments have been made in combining grains, and no doubt some preparations are much better than others.

If a nursing bottle is used, a nipple of black or

brown rubber is better than white. The proper temperature of the infant's food is about 98°F.; colder than this is liable to chill the stomach, and produce colic. Dr. Kellogg remarks, that no other food but milk, except such fluids as are employed to dilute cow's milk, should be used until after several teeth have made their appearance. He recommends that an infant be fed once in two or three hours during the daytime, and once at night until it is a month old. After this he would not feed at night, and no oftener than once in three hours through the day, till the child is four months old. Between four and eight months, the intervals may be prolonged to four hours. Still later, you may gradually drop off the fourth meal; so that at twelve months the child will take its food but three times a day. *Feeble* infants, however, and those born prematurely, should be fed more frequently than others, and will need extra care and warmth. Many children are made sick by *over-feeding*, and by feeding irregularly; this is particularly true when they are fed by hand. A child ought never to be allowed to go to sleep at the breast, or with the nursing bottle in its mouth; neither should it be put to the breast to stop its crying.

One should never *wake* a child to feed it; the more it sleeps, the better. Many infants and children do not get enough sleep; and this, with errors in diet, etc., often makes them nervous and irritable. Another foolish practice is to *shake* the baby (on your lap or in the cradle), to make it go to sleep. This has a tendency to congest the brain, and should be carefully avoided. Not unfrequently the infant is made nervous and wakeful by being tumbled about too much, and shown to admiring friends. Sometimes the child is held too

near a bright light, and its eyes are permanently injured. The quieter it can be kept and the more it sleeps, the better for the baby's nerves and the faster it will grow.

As regards the mother's diet, for the first twenty-four hours after labor it should be restricted to liquids. In most cases, even this form of nutriment is better withheld until after the patient has had a few hours' rest, and perhaps sleep. About the best thing with which to break the fast, is a cup of oatmeal or other gruel very thoroughly cooked; it should be carefully strained, and not too thick; and if the patient prefers, you may add a little fresh milk before removing it from the fire. On the second day, something more substantial may be taken. A bit of dry toast with soft-boiled rice, or other cereal preparation made into a mush, and served with a little milk or cream (or with a mild fruit juice), can be substituted for the gruel. A soft-boiled egg and a piece of toast, or a plain soup or broth may be given.

The diet of the mother is of the utmost importance, both for herself and the child; her food should be simple but nutritious, free from stimulants and condiments, and taken at regular intervals. Meats, pastries, desserts, ice-cream, confections, and all similar articles, should be strictly avoided. Where the mother has exercised proper care in regard to her diet all through gestation, not a great deal of change will be required, either during her confinement or afterward. As the woman will be in bed, a part of the time at least, and therefore less active than before her baby was born, not so much solid food is needed. Fruits and cereals (the former of the mild subacid varieties, and the latter very thoroughly cooked) should constitute

the staples in the dietary. Mushes well cooked, and served with either milk or fruit juices, may be used. If fruits are eaten, it is well to avoid those that are very acid; also the seedy kinds—though these can be strained, using only the juice.

The food for this class of patients, is not unlike what is required for convalescents; see Diet in Chronic Diseases. As the strength increases and the patient is more active, a greater amount of nutriment will be needed, and also a little more solid food. It is sometimes necessary to caution the patient not to overeat; when the labor has been easy, and the physical strength is not much reduced, the appetite will be relatively keen. To surfeit the system at this particular time, might make the mother sick and also the baby.

As the child begins to grow and exercise its limbs, the character of the diet for the mother should be somewhat modified. During gestation, not a great deal of bone-forming material was used; but now that the conditions are changed, the diet should be such as to meet the requirements. A larger per cent. of *solid* materials, particularly those containing albumenoids, will be needed; and as the mother becomes more active, the proportion should be still further increased. At the same time, a woman who nurses her baby will require food that is not deficient in liquids; her own body is about 75 per cent. water, and that of the child contains a still greater proportion. The mother of course is eating for two; but this does not mean that she should take so much food as to *surfeit* the system, nor of a kind so hearty that the tissues cannot appropriate it. The rule to be observed by the nursing mother is to have her food, both in quantity and quality, such as shall meet the physical demands of herself and



infant. If the diet is defective in this respect, she will feel hungry or faint before the mealtime. If it is too hearty or the mother eats too much, she will injure her child, even if she does not suffer herself.

Admit plenty of *fresh air* into the lying-in chamber, not only during labor but afterward, and see that the room is not kept too warm; 70° to 72°F. is about right. The covering on the bed should be carefully regulated to suit the patient's needs. Light porous blankets and *thin* comfortables, are better than heavier ones. A rule of very general application is to keep the patient's feet warm, and her head cool; turning the pillow at frequent intervals, is often an advantage. Care should also be taken to clothe the infant just enough for comfort, and to give it a good supply of fresh air; never cover it up, head and ears, as some mothers and nurses are inclined to do. When putting the child to bed, see that it is not placed so near the mother's body as to be unduly heated; nor so far away on the cold sheets as to chill it. Infants that have rather feeble vitality, need more care than others in this respect.

For the mother, not a great deal of *bathing* is required, provided she has kept the skin in good condition during gestation; something too will depend upon the amount of vitality the patient possesses, and whether she has been accustomed to much bathing. Where the labor has been rather severe and the woman is considerably prostrated, a light sponge or towel bath given every two or three days may be sufficient. If however she feels pretty strong, the bathing can be done more frequently. Keep the genital organs scrupulously clean at all times. Where there is much discharge from the vagina, the frequent use of the

vaginal douche (see page 427) will be an advantage. If the discharges have an offensive odor, a mild disinfectant in the water injected will tend to correct it.

Where the mother is not greatly exhausted after labor, she may be helped into a warm sitz bath about the second or third day, the feet being well covered. Have the water 94° to 96°F. (it must not be so cool as to chill the patient), and continue the bath from ten to twenty minutes, provided it feels comfortable. Then lift the woman out of the bath (two assistants will be needed), dry well with a towel, and put her back in bed with something warm at the feet. The sitz properly administered, is often a source of great comfort to the patient; it also helps to heal the parts if there are slight lesions, and to keep them free from inflammation. The room while giving the bath, should neither be too warm nor too cold; have it two or three degrees warmer than usual.

There is no exact rule as to how long the mother should remain in bed, after an ordinary labor. This will depend upon circumstances; if the labor has been severe or protracted, or if the woman herself is not very strong, she will need to stay in bed longer. Some mothers are better able to sit up the first or second day, than others would be in a week. It is a good plan in these cases, to err on the safe side. The physician, and even the nurse, will often be a better judge in the matter than the woman herself. Where the labor is relatively easy and not greatly prolonged, the patient can usually begin to sit up a little the second or third day; and as her strength increases, she need not lie so much in bed. Many women, especially with the first baby, are apt to overestimate the amount of strength that they possess; and troublesome cases

of prolapsus uteri, are not unfrequently the result of overexertion the first and second week. Often the mother thinks she can *lift her child* without assistance, and even wash and dress it, when the infant is only a few days old. These young mothers sometimes have an ambition to be smarter than other women after confinement. It would be better, in many cases at least, to exercise a little more caution; to take the advice of the physician or friends, rather than rely on her own judgment which is not based upon experience.

There is perhaps even more danger after the second or third week, when the woman dismisses her nurse, and tries to do most of her own work. In this day and generation, when the daughters are not so strong as their mothers, it is well for them to be careful; strength lost, is not always easily regained.

After the woman gets round the house again, she will gradually become more active; the child too is growing, and developing muscle. Just here, there is an important point to be decided. A certain amount of exercise is necessary on the part of the mother, to keep her in good health; at the same time, she should not overdo. Very energetic or ambitious women are usually inclined to do too much; and they injure not only themselves but their offspring. Whereas, a woman who is phlegmatic, next thing to lazy, will not do enough; she will fail to take exercise, even when it is needed. Good sound judgment is called for, in this respect. The character of the *diet* in a given case, will depend upon several things. If the woman is in good health, strong and muscular, and accustomed to active exercise daily, she will require at least twice as much food as another who is rather feeble, slight in her physical development, and not capable of very

great exertion. Again, the woman who is strong and active, will eat and digest more food than one who is phlegmatic, and stirs but little. It will be seen therefore, that both the quantity and quality of the food eaten must be largely determined by the health and strength of the individual, and the amount of exercise taken.

## CHAPTER XI

### DISORDERS OF PREGNANCY

What are termed disorders of pregnancy, are nearly all of them the results of *unphysiological habits*, either during the period of gestation, or for months and years beforehand. In society as we have it to-day, these disorders play a prominent part, not only in making the prospective mother miserable, but in helping to deplete the family pocketbook. So very common have they become, that the woman is advised by her friends to consult a physician at frequent intervals, take a running prescription from him, and follow its directions right along until parturition takes place. It is needless to say, that the physician in charge will be well remunerated for his services, and that a large per cent. of his practice is among this class of patients. Moreover, when labor commences a doctor will of course be in attendance, and the various disorders of the parturient stage will be anticipated, and prescribed for as they occur.

Now, in the hygienic practice, very much of this will be done away with; the patient is instructed early how to *avoid the causes* which lead to disease during gestation, and complicate labor. She will come to understand that Nature is the true physician, and hygiene is her handmaid. Where the woman enters the marriage relation with a practical knowledge of the laws of life and health, she will note with pleasure

that after conception has taken place, the ailments so common to this class of individuals will be conspicuous by their *absence*; and instead of requiring the advice of a physician, she will be in a measure a law unto herself. Not only so, the prospective mother who has all along conformed her life to physiological requirements, will find that if anything her general health is really better than it was before she became pregnant.

But to discuss this subject intelligently, suppose we enumerate the various ailments which are usually met with during the period of gestation. To begin with, what is more common than *morning sickness*, which is often very distressing? This however is but another name for indigestion. The mother's body has taken upon itself an *added function*; and if there is any weakness in the stomach or other digestive organs, it will manifest itself in the early stages of gestation. There are now *two* organizations to be nourished, and often the double strain is more than the system can bear. If, however, the digestive apparatus is strong and vigorous the food will be well managed, and neither nausea nor vomiting will occur. But where the food is not thoroughly digested and appropriated it will remain in the stomach or intestinal tract, decompose, and gases will be given off; either that, or *obstinate constipation* may result.

With this state of things in the digestive organs, other physical ailments are sure to follow. There will be *headaches*. These may occur at long intervals, or more frequently; often they are periodic in character. Many pregnant women are troubled with *biliousness* caused by eating more than the tissues can appropriate, and thus producing a surfeit in the system; or the

individual may not take sufficient exercise from day to day, to carry off the waste matter which ought to be expelled through the depurators. Sometimes the presence of bile in the blood is the result of previous *medication*, this having destroyed the integrity of the liver, as well as of the stomach and other digestive organs. The appearance of *brown patches* on the face during gestation, is often due to the habit of dosing for every little ailment. Taking much medicine, as mercury, liver tonics, quinine, etc., not only destroys the action of the liver, but it impairs the digestive organs. No wonder then that the prospective mother, whose body is trying to do work for two, suffers in various ways. A clogged and bilious condition of the skin, and of the system generally, is often met with during pregnancy.

Another serious disorder, and one of frequent occurrence, is the development of *pile tumors*, especially in the later stages of gestation. Not only is the digestion more or less at fault, with constipation resulting therefrom, but the pressure of the growing foetus on adjacent bloodvessels interferes with the venous circulation, and piles form in the rectum. These are exceedingly annoying, and often very painful; they will also prevent the patient from taking the proper amount of exercise to keep the system in good condition. I pity the mother who has this disorder to contend with, and at a time when both mind and body should be at their best.

A very common affection among pregnant women, is *neuralgia*. This too, as a rule, is the legitimate offspring of errors in diet; often the patient has too much to eat, and too little to do. In other words, the nutriment taken into the system exceeds the elimination

of waste products. The food is not well digested; the blood is filled with crude material, and the skin and other depurators are overtaxed in trying to get rid of it. The natural result of all this is derangement of the kidneys, irritation of the bladder, and intestinal disorders of various kinds; the latter may develop in the large or small bowel, or in the rectum.

Here then is a fine group of diseases, sufficient to vex the life out of the patient; and if she takes medicine to relieve them the blood will not only be filled with retained excretions, undigested food, and the products of malassimilation, but rendered still further impure by the drug poisons. Really, the way to get rid of these ailments, one and all, is to remove the causes which produce them. To have good health, whether during gestation or at any other time, *three things* are of the utmost importance: Pure air, pure water, and pure food. The hygienic physician will see to it, that these are properly supplied to his patients. He will instruct them to take sufficient exercise (if possible in the open air and sunshine) to carry off the waste products of the system. The other habits of the individual must also conform to her physical needs, so that good health will follow as a matter of course.

The mind of the patient should be thoroughly disabused on one point. She must get rid of the idea that our physical ills are dispensations of Providence. If we suffer from disease, we have *transgressed*. It will not do, in this day of enlightenment, to say, "My mother had headaches all her life, and she has transmitted this tendency to me." To use a homely expression, every tub must stand on its own bottom. There is such a thing as counteracting the tendencies



that we have inherited; and the sooner the work of regeneration is commenced, the greater will be our reward.

To insure comfort and good health during gestation, a *correct dietary* is absolutely essential; the food should be taken in moderation, and at stated intervals. Moreover, the individual must have sufficient exercise to promote good digestion. This of itself will help to prevent morning sickness. The stomach will do its work better; the bowels will perform their functions normally; and there will be no disorders, either in the kidneys, the bladder, or the intestinal tract. Piles, external or internal, will not develop. The blood will move freely in its vessels (provided there is no obstruction from clothing or otherwise), and neuralgias will fail to make their appearance. With a well-balanced circulation congestions will not arise, and the patient will be free from headaches. The irritating discharges from the vaginal passage which so many women complain of, will also be among the missing symptoms. Where the blood is free from impurity and is equally distributed, not only to the hands and feet but to every part of the vital organism, it will not accumulate in the pelvis: the bodily functions will take place normally, as nature intended they should.

The swelling of the feet, with varicose veins, etc., which are so distressing to many women near the end of gestation, can easily be prevented. The bloodvessels never swell up until they are pressed upon unduly. With good digestion and a well-balanced circulation, the heart performing its function normally, swollen legs and feet with varicose veins are out of the question. *Convulsions*, whether during pregnancy or labor, are very generally the result of a *constipated condition*

*of the bowels.* This of itself will often make pressure upon the bloodvessels, giving rise to sciatica and various neuralgic affections. It is by interfering with the circulation, local or general, that convulsions are produced. We must never forget, that a single violation of physiological law will often be followed by a whole train of diseases. The vices whether of mind or body, have a marked tendency to appear in groups. Remove the *cause* of our physical ailments, and the effects will not follow.

The *hemorrhages* which so often threaten the life of the mother, either during gestation, in labor, or afterward, are most of them preventable. The individual must so control and direct her habits, that the integrity of the bloodvessels will not be destroyed. She must diet correctly; make pure blood, and no more than the needs of the system require. She must clothe the body properly, covering it evenly from head to foot, and allowing no undue pressure to be exerted upon any of the organs or bloodvessels. In these *two particulars* (diet and dress), women as a rule are great sinners. So are men, for that matter; but perhaps not to the same extent, at least in regard to dress.

The woman who during gestation and before it makes only *pure food*, this being evenly distributed to the various parts of the body, has within her a means of self-defense which will not only ward off disease, but will prevent those serious and often fatal accidents which endanger the life of the mother. A good supply of oxygen, due to filling the lungs with an abundance of pure air, will have much to do with the maintenance of good health. The individual who lives in a corset cripples her breathing power, renders the blood impure, and reduces *vital resistance* against disease.

Such a woman cannot keep herself in good health, much less the unborn child. It too will be fed from fountains that are impure, making its very life blood inferior in quality.

One cause of hemorrhage during the later months of gestation (though it is seldom met with), is what is termed *placenta praevia*. In this, the placenta, instead of being attached to the wall of the uterus near the fundus or top of that organ, develops over the mouth of it; and as the uterus distends with the growing foetus the bloodvessels in the placenta rupture, and bleeding takes place. The reasons given for such an abnormal attachment of the placental membranes, are various. It is believed that frequent *abortions* predispose to this condition. Possibly too sitting most of the time in a bent-over or cramped position, may have something to do with it. *Placenta praevia* is said to be much more frequent in *multiparæ* than in *primiparæ*. Some writers maintain that both *abortions* and *placenta praevia* are very commonly the result of a *diseased condition*, of the mucous membrane of the uterus.

As regards the *treatment* of the various disorders above referred to, not a great deal need be said in this connection. We have already seen that most of these ailments are the consequences of unphysiological habits, in diet, dress, exercise, etc. If the patient will avoid the causes which produce such disorders, they will not be likely to occur during pregnancy. The prospective mother will live in the enjoyment of good health, and when the labor begins this too will be normal.

If from any cause there is slight hemorrhage from the vaginal passage, during either the earlier or later stages of gestation, the use of the *sitz bath* (see page

384) will be of special advantage; have the water neither too hot nor too cold. If too cold it will chill; if too hot it will relax the parts unduly, particularly if employed at frequent intervals. Hemorrhage during pregnancy is of course unnatural; either there is a lax state of the bloodvessels in the uterine mucous membrane, or some other condition is present which is abnormal. The woman should keep very quiet (in bed if need be) until the hemorrhagic tendency subsides. Should it continue however, a physician must be consulted; he should if possible ascertain the cause of the bleeding, and endeavor to remove it. In all these cases, try to keep the general circulation of the blood in *good balance*. See that the extremities are *warm*; and do not let the room get overheated. Hot air has the tendency to send the blood to the brain, and also to congest the pelvic organs.

A rule to be observed at all times, is to keep the intestinal tract free. An accumulation of fecal matter in the bowels, will very soon set up constitutional disturbance. Women who are careful in regard to their diet, and who conform to the needs of the system in the matter of rest, sleep, exercise, etc., will as a general thing have very little trouble during the months of gestation. One is reminded of the old saying, "Be good, and you will be happy." As there is no pathological effect without its cause, it follows as a natural sequence, that strict observance of the laws of health will bring its just reward. Nor must it be forgotten in this connection, that a cheerful and hopeful state of the mind will have much to do in securing the desired results. Those who are always anticipating evil, will be sure to find it. The mother should be *optimistic*, as regards her present and fu-

ture condition. She will remember that giving birth to a child is a perfectly normal process; and that there is absolutely no good reason why she should be other than comfortable and happy. She is fulfilling her mission in life, a most exalted one, and the good angels will attend her.

## CHAPTER XII

### ABORTION

In its broadest sense, *abortion* signifies an expulsion of the ovum before the end of the seventh month of gestation. Some writers however apply this term only to those cases in which the ovum is expelled before the end of the twelfth week; and when the expulsion takes place between the twelfth and twenty-eighth weeks, it is called a *miscarriage*. Where the loss of the foetus occurs only a short time before full term, it is commonly spoken of as *premature labor*.

When a child is born at the end of the seventh month, it is usually considered "viable"; that is, with proper care it may continue to live. Some remarkable cases are on record, in which the foetus has been born alive between the fourth and seventh months; though in the greater number of such births, the child lives only a few hours.

Abortion occurs most frequently during the first, second, and third months of gestation, the ovum being thrown off entire; it is said to take place oftenest at the time corresponding with the menstrual periods. After the fourth month, the tendency to abortion diminishes; the placenta is more or less developed, and the connection between the ovum and the uterus becomes stronger.

*Causes.*—The etiological factors which result in the loss of the ovum, are numerous; they may either be due to

the death of the foetus, or to uterine contractions, these being brought on in a variety of ways. The causes of abortion may be exciting, or predisposing. Among the first named, are violent and repeated coitions; blows or falls; jarring, as from railroad travel; missteps; running a sewing machine; lifting heavy weights; stretching the arms high above the head; mental excitement or shock; overwork; excessive fatigue; tight lacing; and taking *drug medicines*—as for malaria or other disease. Excessive vomiting and coughing are liable to produce abortion; so are convulsions.

One of the predisposing causes, is feeble vitality. Sometimes the tendency to abortion must be referred to the father. Perhaps he is syphilitic; or he is affected with gonorrhoea, and the virus has been communicated to the mother. It is stated by some of our ablest and best physicians, that "Syphilis is probably responsible for a much larger proportion of abortions, than any other single cause;" though according to Noeggerath, the poison of gonorrhoea is a very prominent etiological factor. In writing upon this subject, he says, that women with gonorrhoea rarely become pregnant; or if they do, they either miscarry or bear only one child. He gives statistics to prove this assertion.

Acute infectious diseases in the mother, may produce expulsion of the ovum; though often the mischief is due to the drug medicines which are administered. A diseased condition of the uterine mucous membrane, very frequently results in abortion; and displacements, tumors, adhesions, and degenerations of the uterus, may predispose to it. The *death of the foetus*, is sometimes caused by diseases transmitted from the mother—as syphilis, smallpox, etc.

*Symptoms.*—Among the symptoms of abortion, are

shifting pains in the back and abdomen; frequent urination; a mucous or watery discharge from the uterus; and nausea with vomiting may occur. As a rule, the expulsive effort in these cases is slower than in normal labor at full term. In *early* abortion, hemorrhage is the leading symptom; it may be excessive, endangering the life of the mother. Often the loss of blood precedes pain; or they may take place conjointly. Sometimes the hemorrhage is slight at first, ceasing after a variable period, and then recurring. Occasionally it begins with a sudden and profuse discharge. The bleeding may either take place continuously from the uterine mucous surface, or appear externally at intervals in the shape of clots; in some cases the blood collects in the uterus in considerable quantities before it is expelled. This last is termed *concealed hemorrhage*; it rarely happens before the fourth or fifth month of gestation. The amount of blood lost varies with the period at which the hemorrhage occurs; as a general thing it is less toward the *end* of pregnancy, than in its earlier stages. Very much however will depend upon the extent of separation of the ovum from the uterine wall. Usually the hemorrhage will continue until the uterus is empty; sometimes it is preceded by the passage of small quantities of bloody serum.

Quoting from Etheridge, in "An American Text-Book of Surgery," "So long as any portion of the ovum or its coverings remains in the uterus, just so long will the patient be subject to the risk of hemorrhage and sepsis." Often after several days there is a return of hemorrhage and pain, with slow dilatation of the external os, and the decomposing uterine contents come away piecemeal.



*Diagnosis.*—It is sometimes difficult or even impossible to make a positive diagnosis, without a thorough physical exploration. Exceptionally, the entire ovum may be suddenly expelled, and the mass is either lost or thrown away without being examined. Where pregnancy is known to exist, abdominal pain and uterine hemorrhage occurring at the same time, will furnish presumptive evidence of impending abortion; though the bleeding may be due to other causes, as a diseased cervix.

A satisfactory diagnosis having been reached, the next thing to find out is whether the abortion is simply threatened, whether it is inevitable, or whether it has been completed. If only threatened, the os uteri will be found undilated; the hemorrhage is not profuse, and the pains are easily controlled. But when the abortion is inevitable, the os will usually be dilated sufficiently to admit the index finger. The cervical canal is expanded or expanding, and the uterine contents are forced down within reach of the finger at each pain. Sometimes profuse hemorrhage alone, if uncontrollable, may be sufficient indication of impending loss of the foetus. Where the abortion is complete, the uterus will be free from remnants of tissue or membrane. But if there is a continuance of pains or of hemorrhage, or both, this affords conclusive evidence that the abortion is incomplete.

*Prognosis.*—A fatal termination rarely occurs, except in badly managed or neglected cases. The danger of *septic poisoning* is always a factor to be reckoned with; though it is less after an early abortion, than a later one. Where the case is not properly managed, the very worst consequences may follow.

The effects of abortion, especially in the later stages

of gestation, are sometimes quite serious. Where there is excessive hemorrhage at the time, or if it recurs at frequent intervals, the foetal membranes are apt to be retained, and give rise to inflammatory diseases in the uterus, the ovaries, the tubes, and even in adjacent structures. Such diseases as endometritis, acute cellulitis, pelvic peritonitis, pelvic abscess, salpingitis, pyosalpinx, inflammation of the ovaries, etc., etc., are often caused by repeated abortions. Or hydatoid moles (these resulting from retained foetal membranes), and placental or decidual ploypi, may develop.

It is a recognized fact, that one abortion predisposes to another, particularly if the case is mismanaged. The effect too upon the nervous system, is most disastrous; abortions, one after another, are often of themselves sufficient to undermine the best constitution.

*Treatment.*—In the treatment of abortion, we have first to consider what variety of it we are dealing with. If the loss of the ovum is simply threatened, the os being undilated, the hemorrhage not profuse, and the pains moderate or absent, the indication is to *check* the bleeding, and allow the ruptured vessels to heal. First of all, absolute rest and quiet are essential. Have the patient undress and go to bed, lying in the recumbent position; the room should be well ventilated, and not too warm. Put a bottle of hot water to the feet, and see that they are *kept* warm at all times. By making the blood circulate freely in the extremities there will be less congestion in the pelvic organs, and it will be easier to control the hemorrhage. Then apply cool or cold compresses over the lower part of the abdomen (pounded ice if necessary), in order to promote contraction in the bleeding vessels. If the hemorrhage persists, inject cool or cold water into the vagina,

and against the os uteri. Should it still continue, the next best thing is to give a vaginal injection of *very hot water*, as hot as the patient can bear. This will almost certainly check the hemorrhage, provided the treatment is administered in time. Some physicians recommend tepid injections of tannin into the vagina and against the os; these may be alternated with the hot-water douches. You can repeat this treatment at frequent intervals. The patient must not be on her feet at all, until the danger is past. *Sexual excitement* in these cases should be strictly prohibited.

As soon as temporary relief is obtained, evacuate the bowels thoroughly, by giving a full enema of tepid or warm water (see page 420). The patient should eat but little, until after she is well enough to be around again. A bit of toast with some fruit, or a thin gruel well cooked, is about all that the patient will need while she is in bed. Excitement of every kind, whether mental or physical, must be avoided. To prevent a return of the hemorrhage, give the sitz bath (see page 384) once or twice a day. Have the water deep enough to come well up over the abdomen; it should not be so cold as to chill, nor so warm as to relax the parts. Drugs, which are so often administered in these cases, do no good but much harm.

If, however, the abortion is inevitable, something more will be needed than merely palliative treatment; the mouth of the womb will be found dilated, the cervical canal expanded, and the pains and hemorrhage will continue, notwithstanding the treatment previously administered. Where the ovum protrudes through the os with membranes unruptured, you may gently grasp the latter with the fingers or with instruments, and remove the foetal contents; the physician will of course ren-

der both his hands and the instruments thoroughly aseptic before introducing them. No manipulation should be made which might rupture the membranes, until after they are extruded from the *cs.*

Before the fourth month (the expulsion of the ovum being inevitable), most writers recommend the use of a *vaginal tampon*. The latter if properly applied will generally control the hemorrhage, and also hasten the separation of the ovum by causing an accumulation of blood between the uterus and the membranes; this of itself will excite uterine contractions. The tampon may be made of a long strip of aseptic gauze, or of pledgets of aseptic absorbent cotton; in the absence of these, take any soft fabric, as a silk handkerchief, a soft towel, or strips of cheesecloth. Whatever material is employed it should be sterilized by boiling, by dry heat, or by steam; or you may scald it thoroughly in some hot antiseptic solution. If a large number of pieces are used (as wool or cotton), attach them together by a string to facilitate their withdrawal.

It is needless to say, that this entire process should be conducted by a competent physician; he will first administer a copious hot water or hot antiseptic vaginal douche, the bladder having already been emptied. After the tamponing is completed, the vagina will be moderately filled; an antiseptic pad is then laid over the vulva, this being held in place by a T-bandage. Before removing the tampon, have a second one in readiness in case it is needed. The tampon as a rule is removed in from six to twelve hours, when the entire foetal mass will usually be found in the vagina, or adhering to the packing material. If the ovum has not been expelled or only a portion of it has come

away, we should tampon again, after emptying the bladder and douching the vagina as before.

On removing the *second* tampon we may find that the membranes have ruptured, but that only a portion if any of the ovum has been expelled; we may then have to explore the uterine cavity by the introduction of one or two fingers, both the latter and the vagina having been thoroughly cleansed with hot water or an antiseptic fluid. Where the patient is extremely nervous, it is sometimes necessary to administer an anæsthetic. If the os is not sufficiently dilated to admit the finger, a graduated metal or hard rubber dilator should be employed. In exploring the uterus, separate the retained portions of the membranes if adherent, and remove them. In some cases the finger is not sufficient to effect this, and the adherent mass must be taken away by the careful use of a *not too sharp intra-uterine curette*. The dangers in employing it, are perforation of the uterus by careless manipulation, and needless injuring of the uterine mucous membrane. The curetting should always be done by an experienced physician or surgeon. After the foetal membranes are removed, irrigate the uterus thoroughly with plain hot water, this being the fluid least liable to do harm.

In abortion after the fourth or fifth month, the tampon is *contra-indicated*. For the control of hemorrhage, rupturing of the membranes is preferred. If after rupture of the membranes hemorrhage continues, empty the uterus as quickly as possible; the cervix must be well dilated (if not so already), and the foetus extracted. This done, the placenta should be removed if detached or easily detachable. Where it is firmly adherent you may safely leave it for a few days,

to be thrown off by uterine contraction. Quoting from standard works on obstetrics, the uterus and vagina should be antiseptically irrigated, the former twice in twenty-four hours, and the latter from four to six times or oftener. After the placenta has become detached, it and the remaining adherent fragments may be removed, either by means of the fingers or the curette.

Where the abortion is incomplete, there is often more or less hemorrhage, either continuous or interrupted; the os is slightly dilated, and the cervix flabby. With these conditions, particularly if there is pain, or an odor of decomposition, you may rest assured that some portion of the ovum still remains in the uterine cavity. The indication then is, to empty the uterus completely and at once; with the fingers if this can be done, with the curette if necessary. In the meantime, keep the uterus as nearly aseptic as possible by antiseptic irrigation.

*After-Management of Abortion.*—Essentially the same measures are required in these cases, both for the repair of uterine lesions, and for the proper involution of the uterus, as when the woman has been delivered at full term. Etheridge very justly remarks, that owing to the imperfect development of the enlarged uterus after abortion, the process of involution is even slower than after labor at term. This author believes that there would be a marked decrease in the number of pelvic disorders, and almost as great a falling off in the number of *abortions*, if women were treated more nearly as they are after a normal labor.

*Death of the Foetus.*—Many of the causes which give rise to abortion, as blows, falls, etc., may produce the death of the foetus. The latter is usually expelled

a week or ten days after it dies. When symptoms of pregnancy which have been distinctly felt disappear, there is room for suspicion that the death of the foetus has taken place. In cases of this kind, artificial labor may have to be produced; the presence of a dead foetus in the uterus is liable to impair the health, and even endanger the life of the mother. A safe rule of procedure is to watch the patient carefully; and if after the lapse of a few weeks there are no signs of commencing expulsion, take the proper means to bring on labor. There are various methods of doing this; and the physician in charge will select the one he prefers. Where nature is successful in eliminating a portion of the foetal contents, active efforts by the hand or by means of instruments, may be required to complete the process. In such cases, take every precaution to prevent absorption of septic material into the blood.

## CHAPTER XIII

### CRIMINAL ABORTION

It is a disgrace to our modern civilization, that the crime here referred to prevails among all classes; it is by no means confined to the lower strata of society. Often among the well-to-do, the so-called refined and educated people, criminal abortions are met with. An eminent clergyman once asked: "Why send missionaries to India when child murder is here of daily, almost hourly occurrence; aye, when the hand that puts money into the contribution box to-day, yesterday or a month ago, or to-morrow, will murder her own unborn offspring?" A well-known physician, speaking of the immorality of the practice, believes he has evidence "from a very large verbal and written correspondence," that we have become a nation of murderers.

The motives which lead to such an act, are many; and in some instances, one might almost be inclined to excuse the deed. For example, if a chaste and pure woman has been the victim of rape, her very instincts would prompt her to destroy the life which might result from so unnatural a union. Or a mother who is joined to a brutal and licentious husband, one whose very presence is repulsive to her, may feel that she would rather die than bring a child into the world which might inherit its father's tendencies. Particularly would she be averse to adding another member to her family, if it is already so numerous as to tax



her strength to the utmost. Or suppose the woman is herself diseased, threatened with tuberculosis or other fatal malady; there would at least be palliating circumstances if she attempted to get rid of the product of conception, perhaps in the earlier stages of pregnancy.

Criminal abortion (infanticide) prevails extensively among those who live in luxury, and poverty cannot be assigned as a motive for the crime. Why then is it committed? In many instances the motive is purely selfish. The mother does not want to be bothered with children; these detract from her pleasures and enjoyments in social life. Often too the father, instead of condemning such a course, encourages it. He also would prefer not to have the care of a large family; he would rather spend his time in amassing wealth or in other ways, than in devoting himself to the training and education of children. It is needless to say, that when no higher motives than these influence the men and women of our country, the welfare of the latter is in imminent danger.

The evil here spoken of, is said to be on the increase; not so much among the poor, the illiterate, or even the immoral (using this term in its commonly accepted sense), but among the so-called respectable members of the community. It is very generally admitted, too, that legislation in the matter is wholly inefficient. Preventive measures, to be effective, must go much deeper than mere legal enactments. We must begin at the foundation of our social structures; teach all classes, and especially the young, that *life is a sacred thing*; that we may confer it, but cannot take it away with impunity. The question of supremest importance among civilized and enlightened peoples, is not so much how to

increase the number of individuals, as how to create the highest possible forms of life. When this becomes the ruling motive, the problem will shape itself something as follows: How shall we bring into existence and perpetuate the most perfect men and women?

When the problem here enunciated has been solved, or even profoundly studied, the whole subject of race propagation will take on new and distinctive features; and such measures will be instituted as shall *discourage* the propagation of a low grade of human beings. Moreover, our leading aspirations should be, not so much to excel in material wealth and its belongings, as to stimulate those nobler faculties in the human mind, which will develop manhood and womanhood in their highest estate. The trouble now is, that the *standard of education*, particularly in early life, is not at all what it should be. Fathers and mothers are more concerned about what they term making a success in business, than they are about improving the race. Indeed, so great is the rivalry in this regard, that the very life of the individual is sacrificed to it. With such false standards ever in view, little time is devoted to the strengthening and development of our higher attributes as human beings.

It has been urged that from every Christian pulpit, a note of warning should be sounded against infanticide. We must however begin the work much earlier; the instructions given at the mother's knee, should be such as to make the child look with horror upon any and everything which endangers life. Not only so, those beautiful forms of created existence, the birds of the air, have individual rights which we ought to respect. The young man or boy who would wilfully, and for the mere pleasure of doing it, strike down

these lovely creatures that are meant to bless us, is not to be trusted when it comes to the preservation of *human* life. If a bird or an antelope can be killed, merely to gratify the whim of an individual, his moral instincts will become obtuse; and should one of his fellows tread upon what he conceives to be his rights, that life too will be endangered.

Were the training in the nursery, the schoolroom and elsewhere, of that higher moral quality which stimulates to noble deeds, men and women would govern their lives accordingly. They would have the utmost horror, at the very thought of destroying life. Principles carefully instilled in early youth, and strengthened in later years, will put an end to many vices which we now deplore. Train up a child in the way he should go, and when he is old he will not depart from it.

The great trouble with us all is, that we are too profoundly occupied with those things which concern our *material* prosperity; we are so busy chasing the almighty dollar, that we have neither time nor inclination to look after that higher development which pertains to our spiritual welfare. A modern writer has very truly said, that in order to eradicate the evil of abortion we would have to revolutionize society; make refined Christians out of brutal sensualists; emancipate women from the enticing, alluring slavery of fashion; and uproot false ideas of life and its duties. This author would have those who are known to be guilty of producing abortion, looked upon as murderers—which they certainly are.

To put an end to this nefarious practice, several things are necessary. In the first place, the marriage relation should be one of exalted purity; not one of

gross sensual indulgence. Here indeed is where much of the trouble lies, so far at least as the husband is concerned; in the desire for immediate gratification, *ultimate* ends, physical or spiritual, are lost sight of.

The next step, is to make *maternity desirable*; the woman herself should be in rare good health. This would do away with the fear of suffering in parturition; the child too would be welcome, and a blessing to the home rather than a curse. It is a most lamentable fact, that many children born into this world are not wanted; and usually they do their share in making other people miserable. When every mother is a true woman, and every father a man of the nobler type, the *function of maternity* will be exalted; looked upon as next thing to sacred; there will be no desire on the part of either parent, to destroy the life germ in embryo. The mother especially will consider it a blessing, to be the means of bringing into the world an exalted type of manhood or womanhood.

The crime of abortion, like every other violation of natural law, brings its own punishment, physical as well as spiritual. The imperfectly developed product of conception when thrown off from the uterine wall, leaves a raw and bleeding surface, this often producing serious inflammation; and the diseased mucous membrane may give rise to a fibroid, or even a malignant growth. Quoting from a modern writer, "The mother suffers not only imminent peril of life at the time, but the almost certain penalty of chronic invalidism the remainder of her life." Indeed, every physician who treats of this subject will say without hesitation, that abortion is far more dangerous than a natural childbirth.

## CHAPTER XIV

### DIFFICULT LABOR

It need hardly be said, that if the women who become mothers were in the enjoyment of excellent health, their mode of living being strictly correct, difficult labor would be the exception, not the rule. In many cases, the woman is half sick before she becomes pregnant; and often her habits are not improved, even during the months of gestation. To insure an easy labor, every organ in the body should perform its function normally; the skin, the liver, the kidneys, every depurator in fact, should be thoroughly active and free from congestion. There should be no obstruction in the bowels, no kidney disorders. The circulation should be well balanced, and the whole nervous system in fine working order. Vital function would be at its best; and the mere accident of pregnancy would scarcely influence or disturb it.

Not so however at the present day; there are all sorts of ailments among women, these ready to crop out upon the slightest provocation. Such being the case, it is not at all strange that the causes which produce difficult labors are numerous. Some writers divide them into two classes; the causes which lessen the force of the expelling powers, and those which increase the resistance to the passage of the foetus. Not unfrequently these causes overlap each other, and occur simultaneously. In the management of labor, very

much will depend upon the physical conditions that are present at the time. Even then, the environment will often modify to a certain extent the character of the labor. For example, the room may be hot and stuffy, sending the blood to the brain; or there is too much covering on the bed, this congesting the pelvis. If proper precautions have not been taken, the bowels may be constipated. Retention of urine from pressure of the child's head upon the neck of the bladder would produce local irritation, and make the patient nervous.

If too many examinations are made in the earlier stages of labor it will congest the mucous membranes, and cause trouble. Quoting from Jewett, in "An American Text-Book of Surgery," "Vaginal examinations should be as infrequent as possible. There is seldom occasion in normal conditions for more than one or two examinations, at the most, during the expulsive stage." He remarks that, "all the obstetrician needs to know in normal cases can usually be learned by abdominal palpation and auscultation." Sometimes through carelessness in making the examination, the membranes are ruptured prematurely; this brings the hard head of the child in contact with the os, prevents its gradual dilatation, and irritates the parts. The bag of waters should act as a soft entering wedge, dilating the cervix little by little until the head can pass.

A very frequent cause of difficult and protracted labor, is a tense and unyielding condition of the mouth of the womb. Instead of being soft and non-resistant, it is hard and firm like a whipcord. Too early evacuation of the liquor amnii has a tendency to produce these conditions, and a protracted labor is the result. In exceptional cases, there is *over-distension* of the uterus,

combined with extreme thickness of the foetal membranes. Or the child is excessively large, the mother not having lived correctly in diet, exercise, etc., this resulting in a disproportion between the contents of the foetal membranes and the uterine cavity. Where there is a superabundance of the liquor amnii, or a dropsical condition of the enveloping membranes of the foetus, the obstruction may be such as greatly to prolong the labor.

*Rigidity of the os* is often due to a feverish state of the tissues; or it may result from some other cause. Women who have been treated again and again for erosions or ulceration of the mouth of the womb, will sometimes have a cicatricial condition of the cervix, this interfering with its dilating power. Dr. Alice B. Stockham, in her work on Tokology, remarks: "Caustic treatment so prevalent for ulceration, destroys the natural elasticity of the cervix. Severe and prolonged suffering without dilatation, is often the consequence. The time must come, when people will protest against the burning of mucous surfaces, as they now protest against blistering and bleeding."

What is termed *uterine inertia*, is a failure on the part of the expelling powers by which the labor should be advanced; this usually occurs in the first stage of the parturient process. All at once, or perhaps gradually, the labor pains cease, and no progress is made. In explaining the *causes* of uterine inertia, we must bear in mind that giving birth to a child is the result of certain *muscular contractions*; the muscles in the uterine wall, and also those of the abdomen, are specially called into activity. Now, if these are weak and flabby to begin with, it is but natural that they should "give out." Sometimes they have been ex-

hausted by rapidly-succeeding pregnancies, and the mother is not in a fit condition to bear another child. In the cases of twins, particularly if both infants are abnormally large, uterine inertia may result. Or if, from diseased conditions, there is a superabundance of the amniatic fluid within the foetal membranes, the muscles of the uterus may be weakened by over distension. Sometimes too after severe hemorrhage, as in placenta praevia, loss of muscular power may follow.

If the foetal membranes have been ruptured prematurely and the liquor amnii escapes, the uterus will contract firmly upon the child's body, and its walls become congested, swollen, œdematous. Perhaps the most common cause of uterine inertia, is that after prolonged labor the organ itself becomes fatigued. This is apt to take place in a *first* labor (especially if the woman is somewhat advanced in years), in which the rigid cervical tissues are slow in dilating. It must be said however that anything which obstructs the parturient process, is liable to produce it. Among the mechanical causes are fibroid tumors in the uterine walls, displacements of the uterus, and old peritoneal adhesions.

Where the labor is prolonged on account of rigidity of the *perineum*, the causes are often essentially the same as in rigidity of the cervix. The tissues in these parts, as well as in the mouth of the womb, ought to be soft, moist and pliable; but unphysiological habits, in diet, dress, etc., will have a tendency to produce rigidity, and the progress of labor will be obstructed.

An arrest of the expulsive process is now and then caused by a nervous shock; or by a sudden and powerful emotion, as fear, anger, joy, etc. The writer knew an instance in which the presence of a man midwife



so affected the woman, that uterine contractions entirely ceased. She was in labor with her first child, and only her mother and the physician were in attendance. The doctor was of course sent out of the room, and the expulsive efforts were immediately renewed, these continuing until the child was born. Not every young mother is so susceptible to mental and emotional influences. But in case of severe nervous shock, as from bad news, or an accident, the result might be much more serious. The mother when in labor should be kept as quiet as possible mentally, and also as hopeful.

Sometimes there is a *malposition* of the os (of the whole uterus in fact), so that the mouth of the womb instead of being near the center of the pelvis, is inclined to the right or left side. Or it may be directed backward against the promontory of the sacrum. In rare instances, it projects forward above the symphysis pubis. If however the uterus is in normal position when conception takes place, and is kept so during the period of gestation, the malpositions here spoken of will not likely occur; they are usually the result of conditions that are thoroughly abnormal. Tight lacing, wearing heavy skirts, these resting upon the abdomen, or a constipated condition of the bowels causing straining at stool, might produce the displacement; and a very lax condition of the abdominal walls would have a similar tendency.

A disproportion between the pelvis and the head, may lead to a protracted labor; but this is of rare occurrence. Prolongation of pregnancy beyond the normal time, is said to be a cause. Some physicians consider it a good rule in practice, not to allow a woman to exceed the normal duration of pregnancy by more

than two weeks; they would bring on labor artificially, and thus avoid needless complications.—*Deformities* of the bones of the pelvis, though not very frequently met with, might be so great as to necessitate delivery with instruments, or by other artificial means.—*Anchylolysis* of the sacro-coccygeal joint, usually takes place between the thirtieth and fortieth years. But as the joint between the first and second coccygeal vertebrae is commonly not affected, the pelvic outlet is capable of expansion during labor, offering no special obstruction to the exit of the child. Sometimes however there is a diseased condition within the pelvic joints, due to previous inflammation and perhaps suppuration in the parts, this resulting in more or less deformity of the pelvis. In rare instances there is anchylolysis of *all* the coccygeal joints, including that between the sacrum and the coccyx. When this condition is present, labor can be terminated only by a fracture of the coccyx, or a laceration of the sacro-coccygeal joint.

*Treatment.*—A hard and unyielding condition of the mucous membrane and other soft parts, not only in the cervix but in the external outlet, and even in the vaginal walls, is by far the most common cause of protracted and difficult labor. This is particularly true in primipara; with the first child the cervix usually dilates slowly, and pain more or less severe is experienced. We have already seen (in pervious chapters) that the rigidity here spoken of, is nearly always the result of unphysiological habits, in diet, dress, exercise, etc.; and the tissues, instead of being soft, moist and pliable, are hard like a whipcord. Often they are congested or inflamed, and any effort to dilate them would produce pain. We must however take

things as we find them, and do all in our power to mitigate the woman's sufferings during labor.

In the very commencement of labor, both the bowels and the bladder should be emptied. Where this has not been done, first evacuate the bladder, by introducing a catheter if necessary. Then inject into the bowels as much warm water as the patient can retain, and remove any fecal matter that may be lodged in the rectum or colon. Repeat the injection if there is need. Where labor progresses slowly, the os not dilating as it should, help the woman into a sitz bath (see page 384), having the water about as hot as she can bear; see that the feet are warm, and well covered while taking the bath. The room should be well ventilated, and not overheated. Let the patient remain in the sitz half to three-quarters of an hour, or longer if she is comfortable; the bath can be repeated several times if the conditions require it. Should it not have the desired effect, give a hot vaginal douche (see page 427), throwing the water well up against the os; this too may be repeated. In obstinate cases, you may inject large quantities of very warm water into the intestinal tract, the patient retaining it as long as possible; heat, internally and externally applied, will usually be followed by the desired results.

If there is inertia of the uterus, caused by a tired or exhausted condition of that organ, let the patient take a good rest; this will restore tone to the muscles, and renew their contractile power. Sometimes when the labor has been greatly prolonged, the woman will take a little nap, and wake feeling refreshed. Or a light lunch may be served, and she will rest afterward. Not unfrequently a change of conversation on the part of the attendants, will improve the character of the

labor; it is always a bad plan to hang round a sick bed and appear anxious, as this will have a tendency to depress the mind of the patient. Endeavor to keep her in good spirits, by setting a wholesome example.—Where labor is prolonged on account of rigidity of the tissues of the *external outlet*, give the hot sitz bath, and hot fomentations (see page 413) to the parts. You may apply moist heat by wringing a big sponge out of very hot water, and placing it over the vulva. If the woman has taken sitz baths daily (these warm or tepid) during the later months of gestation, it will do much to prevent rigidity of the tissues.

A nervous shock, or mental excitement of any kind, has a tendency to interfere with the progress of labor. See that no person whose presence is objectionable to the patient, is allowed to remain in the room. A rule to be observed in the lying-in chamber, is to keep the woman in a cheerful and hopeful frame of mind. If the labor lingers she will get discouraged; and ask how long her sufferings are to continue. The physician, and everyone about the patient, should give her every assurance that she is making satisfactory progress; it is well also to remind her, that *slow* labors are generally safe ones.

The practice of giving certain drugs with a view to *hastening* labor, has not unfrequently converted it into one that is difficult, and even dangerous. The contractions become sudden and violent, and the very worst consequences have sometimes followed, the uterus itself being ruptured. Should the expulsive efforts become irregular and excessive, try changing the position of the patient. Hand manipulations properly applied over the abdomen, these being so directed that the foetus shall be held back rather than advanced, may aid in

removing pressure upon the lower segment of the uterus, and thus prevent the abnormal manifestations. The latter are often produced by giving the patient *ergot*; the tendency of this drug is to convert a natural labor into one that is abnormal. Quoting from a modern writer. "The contractions of the womb induced by *ergot*, are likely to become tetanic." This author does not hesitate to say, that "the administration of *ergot* predisposes to rupture of the uterus." Dr. Kellogg remarks, that the use of *ergot* has often been the cause of rupture of the neck of the womb, and also of the perineum, by producing *too rapid labor*. As the hygienist never under any circumstances employs this drug, he is not likely to meet with cases of irregular uterine contraction.

Where the progress of labor is retarded because of *malposition* of the os, endeavor to correct the displacement. This can often be done by simply changing the woman's position; for example, if the os points to the right side of the pelvis, the fundus or heavier part of the uterus will incline to the left; so that by having the patient lie on her right side the fundus will fall toward the right, and the position of the os will be more nearly normal. If however the inclination of the os is to the left, then have the patient lie on her left side. When the os is directed backward against the promontory of the sacrum, the fundus will incline forward. In this case place the hand over the lower part of the abdomen and make firm pressure backward, which will tend to correct the malposition.

In what is termed a *disproportion* between the size of the head and the pelvis, labor is apt to be unduly protracted. But these cases are not of frequent oc-

currence. Moreover, if the mother has lived correctly, especially in regard to diet, during the period of gestation, there will be less obstruction in the parturient canal. Even where the head is large, the bones (half cartilaginous) will yield under pressure, and the progress of labor will not be very much retarded. Some of the easiest labors that the writer has ever met with, were those in which the diameter of the pelvis was somewhat under the natural size. Other things being equal, women who have long trunks and are rather loose-jointed, have the easiest time in bearing their children. Very much however will depend upon the dietetic and other habits of the individual, during the nine months that she is pregnant. If the diet is what it should be, and taken in moderation, the infant will not be too large, nor its bones hard and unyielding. A sufficient amount of cartilaginous substance in the osseous tissues, will make the bones pliable; and they will tend to lap over in the cranial sutures, so that the head will adapt itself to the canal through which it has to pass. If however the disproportion between the head and the pelvis is extreme, it may be necessary to resort to artificial delivery. But instances of this kind are exceptional, even in general practice.

*Anchylosis of the coccyx* is given as a cause of difficult parturition. Often this condition is not discovered, even by the mother herself, until she is in labor. An examination of the pelvis or the coccyx is rarely thought of, either during the period of gestation or before it. If such a condition is suspected in the earlier months of pregnancy, much can be done to prevent a difficult labor. The frequent use of the sitz bath, beginning in the early stages of gestation, and continuing it all the way through, will tend to make

the parts soft and pliable; even the bones will not be so hard and unyielding. Not only so, if the mother is extremely careful in her diet, using less of the bone-forming material, the child will be normal in size and its bones pliable. Inattention to the character of the food eaten, combined with unphysiological habits in the matter of dress, exercise, bathing, etc., is responsible for much of the suffering that women endure in parturition.

Where the bones of the coccyx are *fractured* in labor, wet compresses (warm, cold or tepid) should be applied until the parts are thoroughly healed. The mother too should restrict herself for a time to a diet of fruits and cereals, with not too much of the latter. Raw ripe fruits are especially indicated. The food eaten should be such as to prevent constipation, or an impacted state of the feces.

Exceptionally there may be *deformities of the pelvis*, owing to rickets or other disease in childhood which might render parturition painful, and even dangerous. Where such a condition exists, the extent of the deformity should be ascertained before the woman becomes pregnant. Again, where the pelvis is either so small or so deformed that an infant at full term cannot be born with safety to the mother, then *that* fact should be ascertained early; it may be a choice of evils to bring on labor prematurely, and render delivery possible. It is better to destroy the child than to imperil the life of the mother.

## CHAPTER XV

### COMPLICATIONS IN LABOR

*Hemorrhage.*—Uterine hemorrhage may occur in pregnancy (as in abortion or miscarriage), or during labor at full term. It may also take place afterward, as a *post-partum hemorrhage*. Whatever loosens the attachment of the foetal membranes to the uterine wall, whether in the earlier or later stages of gestation, will leave the mouths of the bloodvessels open and gaping, and produce bleeding. The amount of blood lost will depend largely upon the physical conditions of the woman at the time; also upon whether she has constitutionally what is spoken of in medical books, as the *hemorrhagic diathesis*. A slight lesion in the placental membranes, this exposing the surface capillaries in the uterine wall, might in some individuals cause a fatal hemorrhage. The tendency to bleed easily may be inherited; there is a lax condition of the tissues, and especially of the bloodvessels, these rupturing upon slight provocation. Often too this tendency is increased (or it may be produced outright) by bad habits in eating, drinking, etc. The use of alcoholic beverages, stimulants and condiments in food, etc., will do much to destroy the integrity of the capillaries, and even of the larger bloodvessels. The excessive use of common salt, and highly-seasoned foods of whatever kind, will beget an inflammatory condition of the blood, and predispose to the hemorrhagic diathesis.



In a woman whose bloodvessels are thoroughly sound, there is less liability to adhesions of the placental membranes after the birth of her child. The placenta is promptly thrown off leaving a clean surface, the uterus contracts, and there is little danger of a hemorrhage. But where the bloodvessels and other tissues are lax, adhesions more or less extensive, are apt to exist. Even when the afterbirth seems to be extruded, little stringy portions of it are sometimes left behind; the uterine wall is flabby, and a profuse hemorrhage may follow. Such patients require very careful watching, until there is good evidence that the womb has firmly contracted. In some cases there is a diseased condition of the uterine mucous membrane, and a post-partum hemorrhage is exceedingly liable to occur. Often too the bleeding is the result of bad management (positive neglect it may be), either on the part of the nurse or the physician. In the hygienic practice, a post-partum hemorrhage is of unfrequent occurrence; though very much will depend upon the general physical conditions of the patient. If her habits in diet, dress, etc., not only during gestation but before it, have been unphysiological, complications of various kinds may supervene.

As regards the *treatment* of hemorrhage, we should first of all discover the immediate or exciting cause, and if possible remove it; then take such steps as will promptly check the flow of blood. In cases of abortion or miscarriage, the treatment required has already been described, and need not be repeated here.

But suppose the woman has given birth to a child at full term. Sometimes the placenta not only remains within the uterus but is firmly attached to its wall. When this condition is present, there is liable to be a severe hemorrhage at any moment; so profuse indeed,

that the woman may faint from loss of blood. Hence the need of watching the case carefully, not leaving the patient even for a short time until the uterus is firmly contracted. Perhaps the woman exclaims, "Doctor, I feel strangely; I wish you would see what is the matter with me." You discover a quantity of fresh blood, just thrown out from the vaginal passage, and the patient looks pale and anxious. Not a moment is to be lost; introduce the hand (surgically clean) into the uterus, and with the fingers gently detach that portion of the placenta which adheres to the uterine wall, and remove it. Do all this very quickly. Then elevate the patient's hips by placing a folded sheet under them (two if need be), put a bottle of hot water to the feet, and apply a very cold compress over the lower part of the abdomen; a piece of ice between its layers will be an advantage.

If the bleeding is still profuse, grasp the uterus through the walls of the abdomen with the hands and fingers, making firm pressure upon it; though the rapid and continuous application of cold to the bleeding vessels with hot to the feet, and to the hands if they are chilly, will generally make the uterus contract, and arrest the hemorrhage. Should it fail to do so, inject into the vagina and well up against the os, water as *hot* as the patient can bear. These measures promptly taken, will put a stop to the bleeding; but if from any cause the uterine wall should relax, it may begin again. Remember, that the applications to be made externally are *hot to the extremities*, and *cold to the bleeding part*. Good results are also obtained by injecting very cold water into the vagina, and against the os; though if there is need, very *hot* water can be employed instead. The object sought, is to make the

muscles of the uterus contract vigorously; and if they begin to relax, renew the applications. An excellent means of stimulating contraction of the uterine wall, is to apply friction over the lower part of the abdomen by means of a *stiff* clothes brush; the counter-irritation so produced, has a most desirable effect.

Where the hemorrhage takes place during gestation, treat the same as in abortion. We must check the hemorrhage by applying cold to the congested and bleeding vessels; and at the same time draw the blood away from these tissues, distributing it to other portions of the body. The frequent use of the sitz bath (see page 384), the water being as cool as is comfortable to sit in, will not only assist in checking the hemorrhage, but help to prevent its recurrence. While the patient is in the bath keep her feet warm; a hot stone (or bag of hot water) may be placed beneath them. Have the room well ventilated, and not too warm. Feed lightly till the danger is past; and if the bowels do not move freely, give full injections of tepid or warm water; (see page 420).

It will be seen that the treatment for hemorrhage, whether from the uterus or other parts of the body, is conducted on the same general principles. Aside from removing the cause or causes which may have led to it, the indication is to restore the circulation to as good *balance* as possible, by applying cold to the bleeding part and warm to the extremities. Should the hemorrhage be excessive, we can nearly always check it by producing an engorgement with stasis in the ruptured vessels; and this is done by the application of *very hot* water.

*Placenta Praevia.*—In placenta praevia, the after-birth or a part of it, instead of being attached to the

wall of the uterus near its fundus or top (as in normal pregnancies), lies more or less completely over the mouth of the womb; so that before the child is born, or even comes to full term, bleeding may take place. Fortunately, placenta praevia is not often met with; some writers give the proportion as 1 to 1,000; others, as 1 to 1,500. It is most frequent in women between the ages of thirty and forty. Several varieties of placenta praevia have been described by different authors; practically however there are but two, the *complete* and the *lateral*. In the complete, the internal os is entirely covered by the placenta, usually the thicker portions of it. In the lateral, the great mass of the placenta is at the *side* of the uterus, only a margin of that viscus being near the os; though in some cases the placenta extends partially over it.

Medical authorities in trying to account for placenta praevia, have named various *causes* which might lead to this condition. There is little if any doubt that *abortions* predispose to it; these, especially if numerous, are apt to leave a diseased condition of the uterine mucous membrane, which of itself would favor the abnormal attachment. Women who have borne several children, are, it is said, more liable to be affected in this way than with a first child. Some writers believe that the *sexual act during menstruation*, is an etiological factor.

As the size of the foetus increases, say from the seventh to the ninth month, there may be a rupture of the capillaries, either in the placenta or the uterus itself (possibly in both), and this will give rise to hemorrhage. It is now very generally believed however, by writers upon this subject, that the bleeding comes from the uterus, and not from the placenta; and

that if the child should die in the birth, it would be from asphyxia rather than from loss of blood.—But theories aside it is enough for us to know that if hemorrhage occurs during the last two months of pregnancy without obvious cause, there is at least a probability that it results from placenta praevia.

In most cases, the bleeding ceases after lasting a few hours, or perhaps in a shorter time. It recurs, as a rule, at irregular intervals; it also takes place earlier and is more frequent when the placenta completely covers the os. Reliable authorities state, that complete is much less frequent than lateral placenta praevia; and that in the last named, the bleeding may not occur until labor begins. Another item of interest is, that in a considerable per cent. of the cases, the presentations are other than those of the head. Sometimes labor comes on prematurely with rupture of the membranes, this being an unfavorable symptom.

The *prognosis* is graver the earlier the hemorrhage occurs, and the more extensively the placenta covers the os. Quoting from Parvin, "Not only is there danger from bleeding before birth, but also afterward; for the relaxed lower segment does not completely close the vessels opened by the detached placenta."

Under the head of *treatment* of placenta praevia it has been justly remarked, that no single method is applicable in all cases. If the bleeding occurs during gestation and is not excessive, rest in bed and a few sitz baths (see page 384) are often all that is needed: the patient should of course be dieted strictly, and the intestinal tract kept free. Where the hemorrhage takes place in the later months of pregnancy, treat in the same way. If this does not check the bleeding it is probable that labor has commenced, and the thing

to do is to aid nature, and facilitate her action. If as the labor progresses the bleeding continues, the sooner delivery can be effected, the better. The os is probably dilating, or dilatable; we can therefore proceed to rupture the membranes, and ascertain if it is the *head* that presents. This is often the presenting part in lateral placenta; and usually there is little if any need of further interference. But should there be too great a delay in the parturient process, you may have to employ the forceps. Where the *pelvis* presents, about the same plan is pursued, except that it is advisable to bring down a foot; then conduct the labor as in a footling case.

In a *transverse* presentation, podalic version is indicated. But suppose the hemorrhage is severe, the os only slightly dilated, and rigid. Most authorities would advise a tampon, aseptic of course; it can be made of creolin gauze which has no unpleasant odor. If the tampon is properly applied, little if any blood will escape from the vulva. Leave it in place until the os is completely dilated; then either the presenting part of the child can enter the cervix, itself making a tampon, or you can introduce the hand and bring the hips down, which will accomplish the same end. The tampon is usually left in place from twelve to twenty-four hours, according to the facility with which the os dilates.—A practice received with favor in later years, is as follows: When the os will admit two fingers perform *bimanual version*, according to the Braxton-Hicks method. Then bring down a foot; so that tamponing is first effected by the leg, then by the thigh, and lastly by the hips of the child. We need not hasten the labor, unless for some special reason. If it is found necessary to introduce the hand, we must peel off a

portion of the placenta from the uterus on the side where it is least attached, thus making a way for the child to pass. In *complete placenta praevia*, it may be impossible to reach the membranes without perforating the afterbirth.

If there is much hemorrhage following the delivery of the child, introduce the hand into the uterine cavity, and remove the placenta. Should the bleeding still continue, inject *hot water* into the vagina, throwing it well up against the os. Whatever is done in these cases, must be in strict accordance with aseptic principles. If in employing the methods here outlined the uterus does not contract as it should, put on the abdominal bandage, drawing it pretty tight; this will favor contraction of the muscles. A better way however is to grasp the uterus firmly with the hands through the abdominal walls, which will cause that organ to contract and check the bleeding. While doing this, have the hips elevated, and see that the extremities are kept warm.

*Subinvolution.*—The term here employed, describes a condition in which the uterus does not return to its normal size after parturition. Where the woman is in perfect health, the uterus should resume its normal dimensions in from six to eight weeks after the birth of the child. This change is termed *involution*; when it does not take place the uterus becomes inflamed, hypertrophied, the abdomen is a great deal too large, and the general health suffers.

The *causes* of subinvolution, are numerous; often there is some mismanagement during parturition, or the woman goes to work too soon after confinement. A very prominent etiological factor, according to some writers, is the resumption of sexual intercourse too soon

after abortion, or after delivery at term. Not unfrequently, this ailment is the result of septic infection, either during labor or afterward. Exceptionally, the existence of a polypoid or fibroid tumor in the uterus may give rise to the trouble; or there may be a heart or kidney disease, producing engorgement of the pelvic viscera. Sometimes obstinate constipation is among the causes. Should the disorder continue, chronic inflammation of the uterine mucous membrane will generally follow.

As to *treatment*, if we carefully study the causes of this disorder, we shall see that the things which lead to it are nearly or quite all of them avoidable. To begin with, a correct dietary is of the utmost importance. The food should be simple but nutritious; see Diet in Chronic Diseases. The dress too should be strictly physiological. The woman should try not to overwork; and above all, there should be *continence* in the sexual relation. Indulgence sexually while the mother is nursing her child, is all wrong; and the sooner the parents can be impressed with this fact, the better for the mother as well as the child. But if one or both parents are dissolute, or if sexual excesses are indulged in, and the laws of health generally are ignored, what then?

Perhaps the affection has grown chronic, and the uterine mucous membrane is more or less diseased. In some cases, there has been retention within the uterus of placental membranes and bloodclots, these undergoing putrefactive changes. We must treat in such a way as to stimulate uterine contraction, and enable the womb to purify itself. The frequent use of the sitz bath (see page 384) will be a great aid, having the water as cool as is comfortable for the patient. The



abdominal binder (if it is not too heating) may also be worn at intervals for a time, having it rather snug; this should be made to fit the form perfectly, else it will push the organs out of place, and do more harm than good. Hand manipulations judiciously applied over the lower part of the abdomen, will improve capillary circulation, and have a good toning effect.

If however the case is more serious, as shown by fetid discharges from the vagina, a rapid pulse with some fever, and an impairment of the general health, it will probably be necessary to *curette* the mucous membrane, remove the offending materials, and stimulate the organ to a more healthy action. Keep the parts as clean as possible, by the frequent use of the vaginal douche (see page 427); it may be given every night before bedtime. Have the water warm enough to be comfortable, and continue the douche ten minutes. This with the sitz bath, will do much to improve the condition of the uterus. If the patient is fairly strong, the douche may be taken just before going into the sitz; if not, let her take it in the forenoon, and the sitz at night. In the meantime keep the intestinal tract free. Where the diet is correct, the bowels will probably move of their own accord; should they fail to do so, give enemas of tepid or warm water (see page 420) as required.

If there are displacements of the uterus, treat as per directions for these disorders. Do not put your faith in pessaries; they are worse than useless, positively injurious. Other measures to be employed, are such as will build up the general health; the patient should live out of doors a great deal, and never work to the point of exhaustion.

*Puerperal Convulsions.*—Puerperal convulsions (*ec-*

*lampsia* is another name for them) may take place during gestation, in labor, or after the child is born. They are characterized by a series of convulsive movements in the muscles, and a loss of consciousness which deepens into coma. A very large per cent. of the cases occur in parturition, or immediately following it. Where the woman is in labor, the convulsions usually appear in the first stage, and the attack may come on without warning. As a rule, however, there are premonitory symptoms; as nausea and vomiting, restlessness, dizziness, muscular tremors, ringing in the ears, and severe epigastric pain; though the latter is not always present. Sometimes there is disturbance of vision. If the urine is scanty, and contains albumen and casts, the kidneys are more or less involved. During a paroxysm the patient lies in a fixed position, and is unconscious. The eyeballs move in various directions, but soon become still. The head changes from side to side, and finally turns to the right. The eyelids open and shut, the muscles of the face move spasmodically, and the mouth is drawn to one side. Often the trembling tongue is thrust between the teeth; there is jerking of the limbs; the jaws are set; and if the tongue protrudes it is bitten. Breathing is arrested by the contractions of the muscles of the chest, and the entire body becomes tense.

After the rigid state ceases, respiration returns; the swollen and livid face becomes more natural in color; and noisy expirations drive out frothy saliva, which is often tinged with blood. The clonic convulsions may last from one to five minutes, then cease with a deep inspiration. Coma follows, the patient remaining unconscious and insensible, owing to cerebral congestion. This condition may last from ten to twenty

minutes, or longer. During a convulsion, fecal matter is sometimes expelled from the bowels; the bladder too may be evacuated, or the stomach part with its contents. The body is covered with a viscid perspiration. The pulse, at first perhaps full and strong, becomes feeble and frequent, then more natural in the coma. After the return to consciousness, which is gradual, everything is a complete blank to the patient. Rarely there is but a single attack, and death may result from it.

The convulsions usually recur in half an hour, or it may be several hours; and in grave cases, consciousness may not return after the first attack. The number of seizures is sometimes very great, often a hundred or more. The attacks seldom continue longer than forty-eight hours; and after twenty-four hours the result will probably be fatal. Should convulsions occur during labor this will be accelerated, and often the woman is delivered without being conscious of it. The spasms are now and then excited by uterine contractions; and the escape of the liquor amnii may be followed by a temporary cessation of the paroxysms.

There has been a great deal of discussion in medical books, as to the *causes* of puerperal convulsions. A failure on the part of the depurating organs, or some of them, to perform their functions properly, is no doubt often a factor in producing the disease. Obstinate constipation, whether in children or adults, has much to do in causing convulsions; keep the intestinal tract free at all times, and they will seldom occur. Not unfrequently the trouble is in the kidneys; the toxic elements which should be eliminated through these organs are retained in the blood, and convulsions arise.

As regards the *prognosis*, the mortality is greatest when the convulsions occur before labor commences. The attack may end in death, or in partial or complete recovery. Often the patient dies from general asphyxia, caused by pulmonary oedema or congestion. Cerebral apoplexy produces death in some cases. The mortality is said to be about 25 per cent. In rare instances, the attacks are followed by mental defect; sometimes there is hemiplegia, which is usually incurable. Disorders of vision may remain for several weeks, but they are not generally permanent. Complete recovery is said to be the rule.

Taking up *treatment*,—the important thing to know is how to prevent the disorder. Quoting from medical authorities, "There are no specific remedies in this disease, and no one plan of treatment to be constantly pursued." The fact is, convulsions of whatever kind, are but the *signs* that something is badly wrong in the system.

All through the period of gestation, strict attention to the laws of health should be rigidly observed. The patient should dress in such a way that neither muscle nor limb will be pressed upon unduly. As to the diet, fruits, and especially raw ripe fruits, with a limited amount of farinaceous articles, are best for this class of patients, using little or no sugar. Meats, pastries, and rich dishes of every description, should be avoided; meat in particular has a tendency to break down the kidneys, and produce uraemic poisoning. Where swelling of the feet, and puffiness of the face (noticeably under the eyes) are observed, the patient should take warm baths, wet-sheet packs, vapor baths, and other treatment which will induce sweating; the skin must be made to deurate freely. A dry blanket

pack (see page 412 with hot bottles about the patient, will be a means of inducing copious perspiration. Drinking an abundance of pure soft water, this to be taken away from the mealtime, will help to clear out the kidneys. If the bowels are constipated, relieve them by giving full injections of tepid or warm water; (see page 420).

At the commencement of the attack, place a bit of wood, cork, or other hard substance between the teeth, to prevent the tongue from being bitten; and be careful that the patient does not injure herself in any way. If coma supervenes, apply cold compresses, ice if need be, to the head. Admit plenty of fresh air, cool or cold, into the room. Some recommend hot and cold applications to the spine, these being made alternately. After the attack is over, treat in such a way that it will not be likely to recur. Make the skin active, also the kidneys; and let the patient eat nothing that will render the blood impure. See that the intestinal tract is kept free.

*Hydrocephalus.*—As a disease in the unborn child, hydrocephalus is occasionally met with in labor, and is sometimes the cause of a ruptured uterus. The children of drunken and dissolute parents, are the ones most frequently affected. Among the causes of the disease as given in medical books, are, a scrofulous diathesis; syphilitic taint; bad dietetic habits during pregnancy; and exposure of the mother before the child is born. Hydrocephalus should always be suspected, if the head in labor remains *above the brim*, the pelvis being normal in size. A diagnosis is sometimes made by a vaginal examination; also by abdominal palpation. If any doubt exists as to the nature of the case, anesthetize the patient, introduce the en-

tire hand into the vagina, and find the head resting upon the pelvic brim. The wide-open fontanelles, the great width of the sutures, and the fluctuations which may be felt in these regions, will make the diagnosis more certain. The large size of the head will also be an aid; and often there is an abnormal *mobility* of the cranial bones.

The treatment where labor is obstructed by hydrocephalus, is largely surgical; first, puncture the cranium with a perforator, and let out its fluid contents. After reducing the size of the head, the labor can usually be left to the natural forces. If the latter prove insufficient, fasten a cranioclast to the skull and extract the foetus. Avoid any attempt to deliver with forceps; the instrument will generally slip, and there may be a ruptured uterus, or extensive lacerations with sloughing after delivery.

Should the *pelvic* extremity of the foetus present (as it does in a great many cases), there is usually no special difficulty or danger in the delivery of the after-coming head. The force required for its extraction often ruptures the walls of the ventricles, letting out most of the fluid; or the latter may be forced into the tissues of the neck and back, so reducing the bulk of the head as to permit its extraction. Fortunately, these cases are not of very frequent occurrence. When met with, the life of the mother is not apt to be endangered; and that of the child is of less importance, owing to its abnormal condition.

*Puerperal Fever.*—This was formerly rather a common disease in the drug medical practice, particularly in hospitals; it has been the cause of many deaths. But now that more attention is paid to sanitation, strict cleanliness, etc., it occurs much less frequently; and

among hygienists, who are exceedingly careful about ventilation, cleanliness, a correct dietary, etc., it is very seldom met with.

Predisposing *causes* are, inattention to the things just named, and a gross or impure state of the system. One of the *exciting* causes is believed to be the absorption of putrid material into the uterine bloodvessels, from retained secundines, lack of cleanliness, etc.; in other words, there is a *wound infection*. The disease is sometimes termed, puerperal septicaemia; it is thought to be highly contagious. Quoting from Garrigues, "The immediate contiguity of a churchyard, a dung-hill, a privy, a stable, a slaughter-house, a cess-pool, a sewer, a pool of dirty stagnant water, or similar places where organic substances are undergoing decomposition, is dangerous to a parturient woman." In many cases the poison is brought into the genital tract by the fingers or instruments of the doctor, midwife, or nurse. The inflammation may extend to neighboring parts, involving the whole abdomen, or be limited to the pelvis. It generally starts from the interior of the uterus, and spreads through the lymphatics. Often it leaves extensive adhesions, indurations, etc., in the pelvic and other viscera.

In a well-marked case, the *symptoms* of puerperal fever, are something as follows: From the third to the ninth day the patient is taken with a chill, which may be long and severe. Pains are felt in the uterus, and often there is soreness or tenderness throughout the pelvis. The abdomen soon bloats, becoming tympanitic. The legs are flexed, to relieve the tension; in some cases the weight of the clothes cannot be borne. The milk dries up, and the lochial discharge ceases. There is headache, extreme thirst, and a rise of tem-

perature; also a quick, wiry or bounding pulse. In severe attacks the temperature runs high, or it may drop below the normal. The skin is either pale or purplish, the tongue dry and brown. Often the patient lies in a delirious or comatose condition. The urine is scanty, and may contain albumen. The evacuations from the bowels are offensive, and sometimes they are involuntary. The course of this form of the disease is rapid, and may end fatally in a day or two. It must be said however that under the best management, puerperal fever if taken in the start, is largely shorn of its terrors.

Not unfrequently, there is an inflammatory condition of the system before delivery, together with constipation of the bowels, which predisposes to the disease. But if the intestinal tract is kept free during gestation, the patient using an abundance of raw ripe fruits, and other foods that are not only good and wholesome but thoroughly adapted to her needs, there will be much less danger from "childbed fever." It is believed by many physicians, that the use of *ergot* in labor has a great deal to do in causing the disease. Again, bruising the parts with instruments that are not handled skillfully, produces *lesions* for the admission of septic poison. Giving *drug medicines*, in any form whatever, is among the causes of this dreadful malady. Obstinate constipation is also an etiological factor. The question has well been asked, why is it that puerperal fever is notably absent in those who have lived hygienically.

The best *treatment* in this disease, is prevention. In the first place, if the woman has lived carefully, as to diet, dress, exercise, etc., there will be fewer complications in labor; the parturient process will go on naturally, and *lesions*, slight or more severe, will very seldom occur. The child will be born without difficulty,



and the placenta promptly thrown off from the uterine wall, leaving a clean surface behind. There will be no adherent shreds of membranes, to undergo decomposition and beget sepsis. While the lochial discharge continues, the frequent use of the vaginal douche (see page 427), together with other methods which promote cleanliness, will prevent absorption of septic materials.

But suppose the patient knows little or nothing of hygiene; and after a severe and protracted labor the placental membranes have not been properly expelled. In a few days the dreaded "fever" makes its appearance. This will have to be treated very much like any other case of septic poisoning. If there are chilly sensations, apply hot bottles to the hands and feet, and hot flannels to the spine; try to make the patient as comfortable as possible. Then as the fever rises remove the hot applications, and put on cool or cold. The treatment will vary in different cases. Where there is good vitality, the symptoms are often more pronounced from the start; and with the whole system in a gross or impure state, the morbid manifestations will be greatly intensified. But if the patient is weak, the reaction feeble, the temperature will not rise so high, and the other symptoms will be less marked.

Where the general heat of the body is not very great, frequent spongings with tepid water will often reduce it, care being taken to treat *locally* as the conditions demand. If there is a hot spot, cool it; the object sought is to equalize the circulation, doing it in the way that will use up the least vitality. Where the patient has good power of reaction, the wet-sheet pack (see page 406) can sometimes be employed to advantage, keeping the patient in it till the temperature of the body is lowered. Whatever the form of treatment, it *must*

*not shock*; milder measures, repeated if need be, are the safest.

If there is intense heat in the abdomen, cold compresses will be needed; wring the clothes out of ice-water, and change them every ten or fifteen minutes. In some cases you may apply ice itself, putting it between the folds of the compress. Continue this treatment until the inflammation subsides. Before beginning with the cold compresses, see that the bowels are thoroughly evacuated; it may be necessary to give an enema of tepid or warm water (see page 420). Where the pain is excessive, hot fomentations over the abdomen will relieve it; these may be applied two or three times a day. Often hot water injected into the bowels, will have a very good effect. The use of the sitz bath (see page 384), provided the patient can take it, will aid greatly in reducing the inflammation; the water should come well up over the abdomen, and be of the temperature that is most agreeable to the patient. Persevere in the treatment until the acute symptoms subside.

The diet while the fever lasts, should consist of fluids; not much but barley water or other simple beverage need be given. The system is not in a condition to digest food. If there is thirst, give cold water, pure and soft, all that the patient will take. Or she may have the juice of an orange or other acid or subacid fruit; the juice should be diluted, and slightly sweetened to suit the taste. As the fever subsides and the appetite returns, give thin well-cooked gruels of oatmeal or other cereal; see Foods in Fevers. Soft-boiled rice is often relished by the convalescent.

To prevent *adhesions* from forming in the pelvis, make alternate hot and cold applications over the seat of the inflammation. The douche or spray (hot and cold

alternately) over the affected parts, will also be of service; and hot injections into the vagina and rectum, are useful.

It will be seen that the treatment here employed, is essentially the same as for any other visceral inflammation attended with fever. We must regulate the temperature of the body, and also reduce the *local* inflammation, doing this in such a way as to meet the requirements in different cases. Where the patient has but little vitality, heroic measures cannot be employed; use milder methods, and persevere in them. At the same time, we must not forget that if the local heat is intense, this will generally call for the prompt application of cold. Another point to remember is, that as soon as the fever subsides, all heroic measures must be discontinued; many a patient has been killed by not observing this rule. After the system has been taxed to the utmost in its efforts to throw out impurities, we must give it as little extra labor as possible.

*Inflammation of the Breast.*—An inflamed or “gathered” breast, termed in medical books *mastitis*, is another very common disorder among lying-in women. The ordinary methods of living, in diet, dress, etc., and the habit of dosing for various ailments, especially during pregnancy and parturition, are among the etiological factors. This affection rarely occurs among hygienists. It is a consolation to know, that where the patient lives strictly in accordance with physiological requirements, inflammation of the breast will rarely if ever develop.

Often the immediate cause of this trouble, is an excess of milk in the glands. If the child *dies*, and the milk is not promptly drawn with a breast-pump or

in some other way, the glands may become inflamed. Many women use too much fluid with their meals, and there is a superabundance of milk, not always of good quality. A frequent cause of the inflammation, especially among women who live in the ordinary way, is taking cold; the body gets slightly chilled, and one of the breasts begins to "cake." A severe blow on the gland, will sometimes give rise to an abscess; but such an accident is of rare occurrence.

In this disorder, the attack usually begins with a chill or chilly sensations, followed by more or less fever; the temperature may rise to 104°F., or higher. There are darting pains in the breasts, which often extend to the armpits. The glands swell; they become hard, and tender to the touch, so that even nursing is painful. If pus forms, the skin over the spot looks a dark red; the "hard cake" softens, and there is throbbing in the part.

The *treatment* required is exceedingly simple; and if it is given in time the inflammation may be "scattered," and the parts will not suppurate. On the first appearance of the symptoms, give hot fomentations (see page 413) at frequent intervals, say every twenty or thirty minutes; and after fomenting apply a warm wet compress over the breast, changing before it gets dry. Make the compress of old crash toweling, something soft and porous, which will hold the water; have it of several thicknesses, and cover with light dry flannel to keep in the moisture. Continue the fomentations and the compressing, until the inflammation subsides; and in the meantime keep the breast well drawn. This treatment alone is often all that is needed. Where the breast is large and swollen, it may be supported by means of a bandage properly applied; make it of

some light and thin material that will not be overheating. Should the hardness or caking persist, the application of hot and cold compresses, these alternating with each other, will almost certainly reduce the inflammation. If there are conveniences for taking it, either the full warm bath or the warm wet-sheet pack (see page 406) will hasten the cure. Rubbing the breast from time to time with the bare hand, doing it gently, will also be of service.

Where the case is not seen promptly, and suppuration is about to take place (as shown by the heat and throbbing in the breast), apply hot compresses changing them often, which will bring the abscess to a head; then let it open of its own accord. The fomenting alone will soften up the breast, and reduce the pain; though it is better to apply the warm wet compress between the intervals of fomenting. If however there is a good deal of feverishness or heat in the breast, a compress that is cool or cold will have a soothing effect. Where a cold application is made, do not continue it so long as to produce chilliness.

The patient, while undergoing this treatment, must be careful in her diet. The food eaten should be very simple, both in quantity and quality, until the breast is quite well.

## CHAPTER XVI

### ABNORMAL PRESENTATIONS

As stated in a previous chapter, the only *normal* presentation is that of the head, which occurs in about 97 per cent. of all labors. A presentation of any other part of the foetus, is considered abnormal. Fortunately, such cases are rarely met with; and in a considerable proportion of these, the life of both mother and child is saved.—In vertex presentations, delivery is usually effected without artificial interference; the parturient process goes on of its own accord, and the attendant is simply on hand to render assistance if needed.

In *abnormal* presentations, labor is complicated because of the position of the foetus in the parturient canal; the shape of the presenting part is not such as will favor dilatation of the os, the labor lingers, and sometimes it can only be terminated by the intervention of art. The *varieties* of abnormal presentations, as given in medical books, are as follows: Face, brow pelvic, footling and transverse; to which may be added, prolapsed extremities.

Where artificial aid is required, the character of the service rendered will depend upon the conditions that are present, these varying in different cases. Often about all that is needed, is time; Nature adapts herself to the situation, and eventually the labor is satisfactorily completed. But where intervention is necessary, the best judgment of a skillful obstetrician is of the utmost

importance. A great deal has been written upon this subject, rules being laid down for observance, according to the nature of the presentation; though in a work intended for the general reader, it would be impossible to give in detail the various methods recommended in this class of labors.

It is a question worth considering, whether the *number* of abnormal presentations could not be greatly reduced. A careful study of the causes which lead to them, will aid materially in solving the problem. Neither the lower animals nor the women of savage tribes, are accustomed to suffer in this way; they live much nearer to nature than we do, and so escape the complications which make childbirth in civilized life both difficult and dangerous. Abnormalities in the presentation of the foetus rarely if ever occur, except in so-called civilized and enlightened communities. There can be no doubt that unphysiological habits, especially during the period of gestation, will predispose to such abnormalities. Suppose the woman neglects to take exercise daily, and sits a great deal in a bent-over position; this will crowd upon the pelvic contents, and tend to produce malpositions of the foetus. Or if she diets incorrectly, the digestive organs become deranged and obstinate constipation results. Some women even when pregnant live in snug dresses, perhaps in a corset. Or they have heavy skirts hanging about the hips, and pressing upon the soft abdominal walls; which will not only interfere with the general circulation, but make undue pressure upon the pelvic organs. These, and other unphysiological habits, would be prominent etiological factors in the class of labors here referred to.

It is possible too that very heavy lifting, bending for weeks over a sick patient, or reaching high above

the head, particularly if the clothing were not sufficiently loose, might cause abnormality in the position of the foetus. Doing any kind of work that requires extra tension of limb or muscle, would have a similar tendency. Where the pelvis of the mother is either too small or ill shaped, abnormal presentations are likely to result.

All through gestation, it is of the utmost importance that the woman so clothe herself as to allow perfect freedom of action in every part of the body, and also a free circulation of the blood in every organ and tissue. In diet, exercise and everything else, the habits of the mother should be strictly normal. The trouble in this day and generation is, that very little thought is given, either to the causes which produce pathological conditions, or the methods to be employed in preventing them. Women as a rule are too exclusively occupied with things that are of minor importance, and not enough with those which concern the welfare of their offspring. The mother who does her whole duty, will study cause and effect; she will so order her life that every requirement for the development of a higher race of human beings, physically and mentally, shall be fulfilled. In eating, drinking, exercise, rest, recreation, etc., she will conform strictly to health rules; and in her mental attitude, she will observe the higher law.



## CHAPTER XVII

### CARE AND FEEDING OF INFANTS

It has already been stated, that every mother should if possible nurse her own child. If however the mother is in poor health, or if her milk is deficient in quantity, or quality, a substitute may have to be provided. Probably the best, if it can be secured, is a good healthy wet-nurse; though it is often very hard indeed to find one that is suitable, and the child may have to be fed by hand.

In selecting food for an infant, there are several things to be considered. First, the age of the child; whether it is newly born, or several weeks or months old. Second, whether it is naturally strong and vigorous, able to digest its food well, or is delicate and puny; these are very important conditions, which must be taken into account. Third, the character of the food itself. This should be pure, free from adulteration, and as fresh as possible. It is said that in some of our large cities, no less than 60 per cent. of the mortality among infants is due to *impure* milk. Sometimes it is exceedingly difficult to get milk that is suitable for babies.

Beginning with the new-born infant—if the mother cannot nurse her child and a good wet-nurse cannot be had, the next best thing for the baby is cow's milk; the cow should be in a healthy condition, and her calf quite young. Just here, there are obstacles to contend

with. In the first place, milk even from a fresh cow is very different from that of the mother; it contains nearly three times as much proteids or curds, and only a little more than half as much sugar. In most works that give directions for the feeding of infants, formulas are outlined, in which the cow's milk is so modified as to render it more like mother's milk. Scarcely any two writers agree however, as to the proper proportion of the several ingredients which make up the formula. One reason for this difference is, that no two breeds of cows give just the same *quality* of milk. For example, the milk of a full-blood Jersey contains a much larger proportion of fat, also quite a per cent. less of sugar, than is found in the milk of a Durham, an Ayrshire, or one of the common breeds. Even in two cows of the same breed the quality of the milk will vary, not only in the proportions of fat and sugar, but in other particulars. This is no doubt one reason why it is better to mix the milk of several cows, in constructing a food for infants.

Most physicians recommend diluting cow's milk, especially for very young babies. They add to the milk, water that has been boiled; though some use a thin gruel very thoroughly cooked, and strained. The gruel may be made from oatmeal, wheat meal, rice, or barley flour; Robinson's patent barley is excellent for this purpose. Gruel made from the latter is prepared as follows: A heaping tablespoon of the flour thoroughly blended with a little cold water, is slowly stirred into one pint of boiling water. Cook in a double boiler for twenty minutes, and strain. If the gruel is made from wheat meal, or from rolled oats, a good rule is to take one heaping teaspoonful to a pint of water; then cook two or three hours, and strain.

A lady physician (a hygienist) who has had much experience, feeds very young babies as follows: Take milk fresh from the cow, one ounce (two tablespoonfuls); oatmeal or other gruel, two ounces (four tablespoonfuls); add to this, sugar of milk, half a teaspoonful. The gruel should be made fresh each morning, well cooked and strained, and mixed with the milk while it is *hot*. As the child grows older and stronger, the quantity of milk is increased; say three parts of the latter to five of the gruel. Still later, the proportions are half and half. For a child several months old, one that is growing and healthy, milk alone may be given; or you can add a small amount of gruel if preferred. This physician has in rare instances met with cases in which the child could not take cow's milk, diluted or otherwise. To these babies she gave Horlick's malted milk, and they thrived on it.

It is the opinion of some mothers, also of some physicians, that many babies, particularly if they are well and strong, do better on milk that is not diluted, but given in *smaller quantities*. There are however several conditions necessary, in order to get the best results. The cow should be perfectly healthy, and give milk that has more sugar and less fat in it than that obtained from Jersey cows; and for the new-born infant, the calf should be only a few days old. Then take the *first* of each milking, never the strippings. And if it were practicable, the best way would be to milk directly into the bottles (clean of course), and seal immediately. This would make sterilizing unnecessary. The amount required at each feeding will very soon be determined, if the mother is a careful observer. The baby, if well, should be hungry but not ravenous at feeding time.

Where cow's milk is not well digested, malted milk is frequently resorted to. Sometimes it will tide over a fit of indigestion, and the baby can take plain cow's milk afterward. If there is constipation, using a diet of good cream diluted with water (sterilized), will often afford relief; though after the child is six or seven months old, an ounce or two of weak prune juice (no sugar) given an hour or an hour and a half *before* the regular feeding, will usually relieve it. There are other mild fruit juices that can be similarly used, as apple, peach, strawberry, etc., these being strained, and very moderately sweetened. When the baby is from eight months to a year old, it can as a general thing take the juice of a sweet orange in the same way—an hour or so before the regular mealtime. A little scraped apple (very fine and smooth), or good *stewed* fruit properly cooked and strained, and not too highly sweetened, is sometimes used to advantage. Where the bowels are constipated, a few meals of rice water will often have a good effect. This is prepared the same as the other gruels.

For people who live in cities, and find it hard to get milk that is absolutely pure, the latter may have to be sterilized; this is done by bringing it slowly to a boil, and keeping it at that temperature for one hour. In what is known as *pasteurizing* (which is perhaps better than sterilizing), the milk is heated for thirty minutes at a temperature of 170° F. Milk that has been heated, is less digestible; but in hot weather where ice cannot be had, it is often a choice of evils. In going upon long journeys, or across the ocean, it may be very necessary to resort to heating.

For babies that are hand fed, a cylindrical, graduated bottle with rather a wide neck, is best; this admits of easy washing, and contains no angles or corners.

A size holding eight ounces, is sufficient for the first year; one should have as many bottles as the child takes meals in a day. As soon as emptied rinse with cold water, then fill with water to which a little bicarbonate of soda has been added. Before the milk is put into them, wash thoroughly with a bottle brush and hot soapsuds; then immerse for twenty minutes in boiling water. Use only straight nipples, which slip over the neck of the bottle; black or red rubber is best. The *hole* in the nipple should not be so large that the milk will run in a stream; it should drop rapidly, when the bottle with the nipple attached is inverted. New nipples should be boiled for five minutes. After using rinse them in cold water, and keep in a covered glass containing a solution of boric acid. Once a day turn the nipples wrong side out, and wash thoroughly with clean soap and water, rinsing well afterward. For stoppering the bottles, the ordinary absorbent cotton will answer very well.

Always prepare at one time, a sufficient quantity of food for twenty-four hours. Divide this into the required number of feedings for the day, putting each into a separate bottle, this being stoppered with cotton. Then cool the bottles rapidly, standing them first in tepid and then in cold water, and placing them afterwards in an ice-chest. If the milk is to be sterilized or pasteurized, this should precede the cooling. When the child is to be fed take a bottle from the ice-chest, and stand it in warm water deep enough to cover the milk. The temperature of the latter should be raised to blood heat, or a little above it.

As to the *frequency* of feeding, Dr. T. M. Rotch, would feed every two hours until the child is six weeks old; then make the intervals half an hour longer. At

five months he would lengthen the time to three hours, continuing this until the child is a year old. There is a difference of opinion, both among physicians and mothers, not only in regard to how often a baby should take its meals, but whether it should be fed at night. Some would feed once, others twice at night; and I have known a few babies do well that were fed only in daytime. Dr. Rotch recommends feeding but once at night, this to be discontinued after eight weeks to three months. Dr. Holt would feed twice at night for three weeks, then once at night up to the fifth month, and discontinue the night feedings afterward. A good deal however will depend upon the condition of the child; if it is not very strong you may have to feed oftener, and give one or two feedings at night. A fact that all mothers should bear in mind, is that most babies are fed *too much*; and where a child throws up its milk, this is proof positive that it is not digesting perfectly.

Where the infant has to be hand fed, one of the first questions the mother asks, is how much she shall give her baby at a single feeding. This is rather a hard question to answer; so difficult indeed that no arbitrary rules can be laid down. The amount that the child can digest will depend upon its age, the vitality with which it is born, the strength of its digestive organs, and whether it is in perfect health.

The best that can be done therefore, is to construct a table which with slight variations will apply to the average child; one that is fairly robust, and in its usual health. In consulting the different authors who have written upon this subject, it will be seen that no two of them agree, when it comes to giving propor-

tions. Perhaps as accurate a table as can be devised, one that will serve as a general guide, is the following:

SCHEDULE FOR FEEDING HEALTHY INFANTS  
THE FIRST YEAR.

Age.	Intervals between meals by day.	Night feedings (10 p. m. to 7 a. m.)	No. feedings in 24 hours.	Quantity for one feeding.	Quantity for 24 hours.
	Hours.			Ounces.	Ounces.
First week.....	2	2	10	1 —1½	10 —15
Second and third weeks....	2	2	10	1½—2	15 —20
Fourth and fifth weeks....	2	1	10	2 —2½	20 —25
Sixth, seventh, & eighth weeks.	2½	1	8	3 —4	24 —32
Third fourth & fifth months..	3	0	6	4½—6	27 —36
Fifth to ninth month....	3	0	6	5½—7	33 —42
Ninth month to one year.....	4	0	5	7½—9	37½—45

Such a table as the preceding will be found very helpful, especially to a mother who has had but little experience. Where milk is used undiluted, a much smaller quantity will be needed; and in these cases, it is a question whether water should not be given between meals, either from the bottle or a spoon, in order to supply the required amount of fluid. Most physicians in making up a formula for infant's food not only add lime-water but salt; neither of which should be allowed to enter a baby's stomach. It would not be so bad if water were given between meals; this would allay thirst, and also aid the system in throwing out the crude materials. The habitual use of salt in

its food, is bound to make the child thirsty; but the little one cannot ask for water, and many mothers would not think to give it.

In nine cases out of ten where the mother relies solely upon her own judgment, she feeds too much; then the child's stomach will be upset, and she will not know what to do. It is well to remember however, that it is better to err on the *safe side*; to give too little, rather than too much. An infant that is properly fed, ought to grow right along from the very first; not so much in actual weight, as in strength of muscle and limb. Many of the babies we see on the street, everywhere indeed, have been overfed; or quantities of sugar are used in their food. This produces an excess of fat; their bodies are covered with adipose, and loose areolar tissue. Such babies take cold easily; and with a little exposure they have croup. Often before they are two years old, symptoms of catarrh are present; and before they are five, the throat is obstructed with enlarged tonsils, or with adenoid growths. The child breathes with its mouth open, particularly at night, and the mother wonders what is the matter with her little one.

A baby that eats good wholesome food, and no more than its system requires, should be strong and muscular. Its blood will circulate freely in every part; and when you place your hand upon its little body a glow of warmth is felt. Its breathing will be unobstructed, its digestion perfect. Such children sleep well; they are not nervous and restless. The muscles in their limbs and over their bodies, will be tough and wiry; not soft and flabby, making the child relatively helpless. It will be active from the time it leaves its cradle, and anxious to get out of doors. But



how few babies do we see like that, especially if they are bottle-fed. Their food is made too sweet, there is too much cream in it, and they are fed to excess. Very nearly the same rule holds for babies, as for grown people; they should be hungry for their food when it is offered, take it in moderation, and not too fast. From twenty to thirty minutes is about the time necessary for a single meal, whether from the breast or bottle. A baby that is raised by hand, should if it is very young be held in the arms of its mother or nurse while taking its food. After it is three or four months old it may lie on its side in the crib, provided the bottle is held by the nurse until it is emptied. On no account allow the child to hold the nipple in its mouth after the bottle is drained. Be regular in the times of feeding, and give nothing between meals.

It will be seen from the table that the quantity of food given is in a gradually increasing ratio, from one week to twelve months. Children that are feeble, their digestion not very good, will have to be fed oftener and in smaller quantity than more vigorous ones. If the child is sick or indisposed, the quantity of food should be diminished; and if it is *very* sick, little if any nourishment should be allowed, for a time at least.

In raising a baby by hand; the following rules will be of service:

- 1.—None but milk of good quality should be fed to babies; it should also be as fresh as possible.
- 2.—City milk, as a general thing, should be sterilized—or pasteurized.
- 3.—Boil all water used in diluting milk.

4.—The cereals from which gruels are made, should be boiled at least two hours, or steamed three hours.

5.—The mother should either prepare the food herself, or see that it is properly done; she should also *taste* the milk before giving it to the baby, especially in hot weather when it is likely to sour.

6.—If the child spits up its food after a meal, prolong the interval between feedings.

7.—Watch the bowels closely, and see that they move regularly; also note if the food is well digested.

8.—Where there is indigestion, the child is apt to become restless, perhaps wakeful. The thing to do is to prolong the interval between the meals, and give the stomach a chance to rest.

9.—Where the restlessness is due to insufficient food, increase the quantity.

10.—If there is feverishness or other indisposition reduce the amount of food, say one-half, until the conditions are improved.

11.—A good plan is to keep malted milk on hand, in case the other milk turns sour.

12.—In feeding, as in other things, the little one should not be wholly intrusted to a nurse.

13.—Never play or romp with a child immediately after it takes its food, as this will interfere with the digestive process. The baby should be kept quiet, both before and after feeding; let it go to sleep if it will.

14.—Never wake a child to feed it; and never urge it to take food when it is not hungry.

15.—In preparing food for the infant, have special utensils for that purpose, and keep them scrupulously clean.

16.—One direction that applies to every baby,

whether it nurses its mother or is fed from a bottle, is that in bathing, exercise, etc., these should never come too near the mealtime.

Most babies should be weaned when they are from twelve to fifteen months old. Much however will depend upon the health and strength of the child, and whether the mother herself is in good physical condition. If the little one is rather delicate, it will need its mother's milk longer; or if the woman is in poor health, she may not be able to nurse her babe the usual length of time. As a general thing, it is not a good plan to keep the infant at the breast until it is a year and a half or two years old; this is bad for both mother and child. While the mother is nursing, she should be exceedingly careful in regard to her own diet; eat nothing that is hard to digest, or that will make the baby sick. She will remember that the food she eats forms the milk for her babe; and that the blood made from it, if poor in quality, will predispose the little one to disease.

The mother should not as a rule wean her child all at once; let her begin by degrees, say when it is eight or ten months old, and feed little. In doing this, great care should be taken that the things given to the babe are of good quality. Only the simplest articles of diet are suitable; as bread and milk; oatmeal porridge and milk; graham mush and milk; soft-boiled rice and milk, and be sure that the rice is cooked soft. Rice half done, is very indigestible; and so is oatmeal. In preparing the latter, cook well and strain it, and add the milk after the porridge is partly cooled. As the child grows and the teeth develop, the amount of food can be increased. A little fruit thoroughly ripe or cooked soft, may be given from time to time; it should never

be *over* ripe, nor contain skins or stringy substances. If a meal of fruit is given, it should take the place of one of the times of nursing. The best bread is that made of good graham flour, or part graham, sifting out the coarser flakes of bran, as this may irritate the delicate mucous membrane of the stomach and bowels. Where good graham cannot be had, whole-wheat flour may be used instead.

Well-cooked rice is really a staple, not only for infants and children, but for people of advanced age; it is also excellent for patients who are convalescing, as from a low fever, or some other exhausting disease. It should be thoroughly cooked, boiled or steamed for several hours, until the grains are quite soft and well blended with the water. This forms a sort of gruel, which may be thinner or thicker as the case requires; and with a little milk added (hot or cold), it is easily digested even by the most delicate stomach. I scarcely know another food which is its equal in this respect; and it should be a leading article in every child's dietary.

Until the teeth are fairly well developed, the diet should consist almost exclusively of the articles above named; the great danger is in feeding too much. A little later, both the quantity and the variety of the food can be somewhat increased. Among vegetables, which are usually harder to digest than fruits and cereals, the potato is about as simple as anything; it may be baked or boiled, as preferred. The child may have mashed potato and milk at times; or a soft-boiled egg broken over the potato is not bad, once in a while at least. But such articles as meat, butter, coarse vegetables, pastries, preserves and sweetmeats, will tend to derange the stomach, and make the child sick. Still worse are fried potatoes (fried anything),

rich puddings and desserts, very sweet foods, or highly-seasoned dishes. If you want to make the child ill, give it these things; also pickles, spices, and condiments; they are the forerunners of dyspepsia. Tea, coffee, cocoa, and the like, are among the forbidden things.

As a general rule, the baby should not be weaned in hot weather; better let it nurse a while longer, and wean when the weather is cooler. In making any change in the diet, there is often danger of stomach or intestinal derangements; and this is more to be dreaded in hot weather than at other times. Thorough kneading of the child's bowels after a bath, this being away from its mealtime, will not only tend to promote healthy action of the intestinal tract, but strengthen the digestive organs. The careful mother will see to it, that both the bowels and the bladder are regularly and thoroughly evacuated.

While the infant is cutting its teeth, the mother if she nurses it should look well to the character of her own diet; errors in this regard, will very soon show their effects in the child. The difficulty that most babies have in teething, is due to unphysiological conditions; either the diet is at fault, or something else has gone wrong. The English people, and also the Scotch, have set a very wholesome example in feeding their children. After the little one is weaned, a separate table is provided for it; the child is fed with bread and milk, mush and milk, rice and milk, and only such articles as are suited to its needs. Not until it is six or seven years old, is the child allowed to go to the general table, and partake of meat, butter, coarse vegetables, tea and coffee, or other articles of food which are served to grown people. The *children* at least are

well cared for in this respect; and even the adults, as a rule, are much plainer in their dietetic habits than they are in the United States.

Most children and even infants in this country, do not get enough sleep. We are such a wide-awake people that late hours are often kept, and the household does not quiet down until ten or eleven o'clock at night. Then in the morning, especially among country folks, everybody is astir early; and the baby will have to be a sound sleeper, if it is not wakened. We are living too fast, for the good of the next generation; more quiet and more sleep are among the things needed, to develop children as they should be. A modern writer on this subject remarks, that a healthy child during the first few weeks of its life, ought to sleep nearly five-sixths of the time. A good many of our babies do not get half that much. Some infants are badly spoiled, and want to be rocked or shaken to make them go to sleep. The right way is to put the little one in its crib, turn out the light, and let it drop off to sleep without further attention. If the infant is started right in this respect, it will as a rule give very little trouble. There is a difference in children however; some are born nervous, the antenatal influences not being normal, and they will require very careful management in order to get the best results.

The baby does better to sleep by itself, and not have to breathe the exhalations from other people's bodies. It is particularly bad to have a child sleep with elderly persons. Those in the decline of life, are often half sick; ailing, in one way or another; and in any case, physical vigor is not at its best. When the child is put to sleep, see that its face is left uncovered; it needs plenty of air to breathe, as well as grown folks. The

room should be well ventilated, and the crib so placed that strong drafts will not blow over it. On pleasant days, it is a good plan to set the crib out of doors, in the open air and sunshine. Place it so that the rays of the sun will not fall directly on the little one's face. In cold weather, see that the baby is well protected in its crib; the covering should be light and porous, and just enough for comfort. If the weather is very cold bottles of hot water may be placed in the crib, but not so near as to overheat or burn the child.

In regard to clothing, the same rule applies to infants as to grown people; the body should be covered evenly from head to foot, keeping the circulation well balanced. Light flannel, soft and porous, is the best material for the clothes, except in very warm weather. Some mothers put too much covering on their babies, keeping them overheated a good part of the time, which is extremely debilitating, especially to the skin; it predisposes to colds, influenza, and other diseases of the respiratory tract. Another error frequently made, is to wrap the head and neck in warm flannels. This should never be done, unless the child is about to be exposed to cold, as in taking it out on a winter morning. The head so bundled becomes sensitive to atmospheric changes, and the ears are often greatly injured in this way. The temperature of the room where the infant lives, should not as a rule be warmer than 65° or 70° F.; though something will depend upon its natural vigor. One that is delicate from birth, will need more warmth and more care than a child that is hearty and robust. It is not necessary however to kill it with kindness. Many mothers are in the habit of *drugging* their infants for every little ailment, and very soon the child has acquired the *nervous diathesis*;

it becomes feeble and sickly. These children require more clothing than if they were strong; and they would be better off if there were not a doctor within a thousand miles, nor a drug store on the corner.

As to bathing, no hard and fast rules can be laid down. A child that is strong and vigorous, should have a bath oftener than one that is feeble. Where there is good power of reaction, the skin reddening after the bath, and especially after the rubbing, it may not be too much to give a bath daily, having the temperature of the water very nearly the same as that of the body. Children that are improperly fed, allowed meat, butter, and other greasy foods, will require more bathing than if they were dieted correctly. A little soap may also be needed, every few days at least, to remove a portion of the oil from the skin and make it depurate more freely. But if the little one is fed right, less soap is called for. As the child grows older, the temperature of the water may be somewhat reduced, say to 85° or 90° F.; though this will depend upon the vigor with which the system can react. Every bath should be followed by thorough hand rubbing, till the skin is in a glow. Be sure that the feet are left dry and warm; give them an extra rubbing at the end.

For an infant that is feeble, a bath every other day is probably enough; and scarcely any soap should be used. A little cocoonut oil or other unguent may occasionally be rubbed over the body, and about the throat and lungs. Delicate children not only require less bathing, but the temperature of the water should be a little higher. An excellent rule, is to give no bath or other treatment that will produce a shock. If a child dislikes its bath, dreads it in fact, this is pretty good evidence that either too much bathing is



done, or the water is too cold. Feeble nerves abhor any treatment or application that shocks. We must discriminate according to the conditions that are present.

The hand rubbings that follow the bath, will not only increase capillary circulation but tend to strengthen the muscles. These rubbings may also be given at night when stripping the baby for bed, and in the morning before dressing it. Every infant enjoys a good rubbing, not merely to the limbs, but over the back and down the spine; the muscles are strengthened and invigorated, and the nerves are soothed. Mothers do not pay half enough attention to this, nor to changing the position of the child. Even very young babies like to be taken up and carried; it gives them a little change, and a certain amount of exercise. If the weather is fine throw a wrap about the infant, and take it out of doors; either in its carriage or in your arms. After it is older, a ride on horseback is particularly well liked; I know a father who saved the life of his boy, by taking him for rides on horseback after the doctor was dismissed. It is a good plan to expose the child to the sun daily, or at frequent intervals, when the weather permits.

In teaching the little one to walk, great care should be taken not to have it stand too long on legs that are unaccustomed to the strain. Bandy-legs, knock-knees and other deformities, may be produced by having the child walk too early. Better have the walking exercise oftener, and not too long at one time. Before the child can stand alone, do not make it sit up too long; the muscles of the back, like every other part of the body, should be brought into action by degrees. Lifting a child by its arms, and especially by one arm, should be avoided, as there is danger of dislocating the

joint at the shoulder. Mothers should also be careful not to lay the infant down too often on the same side; the bones are soft, and both the face and the head may be made crooked. Neither should the baby lie too long on its back, especially if it is ill, as with a fever; the back of the head and the spine may be congested in that way, and cause cerebro-spinal meningitis. Curvature of the spine is sometimes produced, not merely in the child but in the nurse herself, by carrying the infant always on the same arm.

If shoes and stockings are worn, do not have them either too small or laced too tight; this would interfere with the circulation, impair muscular growth, and tend to make weak ankles. As the child grows, be particularly careful about the foot covering; shoes that are too short will cause in-growing toe nails; and if too narrow they will twist the toes to one side, make the foot pointed, and produce bunions. Still greater deformity will result if the shoes are not rights and lefts. Where the toes have been more or less twisted, either in childhood or later in life, both corns and bunions are liable to develop, and become a source of torment. Often too the ankles give out, simply because the foot-gear has been at fault.

## CHAPTER XVIII

### THE CARE AND TRAINING OF CHILDREN

*Precocity.*—It is a fact well known, that there is a certain precocity about our American children, which distinguishes them from all others. They mature too fast, both mentally and physically. One sees on the streets, little boys and girls and even infants with great immense brains and thoughtful faces, that do not normally belong to early childhood. Often they appear more like old men and women, than like strong and healthy children. The parents have transmitted to their offspring that nervous activity which characterizes our people as a race. The strenuous life that many of them lead, predisposes to what might be termed the *nervous diathesis*. Those who travel abroad, into England, Scotland, or Germany, and have seen the youths in these countries and compared them with our own, speak of the difference between them. The children abroad are relatively slow and plodding; while in this country they are active, wiry and nervous.

There are many influences at work to-day, to render the American child precocious. We stimulate too much, physically and mentally. The use of stimulants and condiments in food and drink, has a very abnormal effect; it puts vital force on the *qui vive*, so to speak, and an artificial development is the result. In the next place, our children are sent to school too early, and too many hours are given to mental application;

when the child is seven or eight years old, is soon enough to start him into school work. If too little time is devoted to *sleep*, the brain becomes abnormally active. Most children enter society too young. This is particularly true of girls; and it is one cause, not only of premature development, but of an early breakdown. It takes *time* to develop vital structures, and establish normal functions; and it is a great mistake to cut short the periods which should be devoted to this work.

The fact is, we are living altogether too fast; developing brain power at the expense of the physical. Too much gray matter in the nervous system, is not a good thing; we need a sufficient amount of basic structures, to give us strength and endurance. The *necks*, not merely of the children but of adults, are too slender; there is not enough vital force to sustain the big brains and active nervous systems. Can we not counteract this tendency, so that the *next* generation will be better equipped?

But how shall we proceed? Really, the change ought to commence before the child is born. Let the father and mother take things less seriously; give more heed to physical comfort and quiet thought. Indeed, the mother's first and highest duty is to her unborn child. Not only so, she should set an example of patience and loving kindness to the little ones about her knee; inspire in them hope and trust, and an abiding faith in humanity at its best. The mother who is care-worn and anxious, ever striving to accomplish something that is scarcely within her reach, will beget in her offspring the same nervous tendencies. She has but to look into their little faces, to see the same restless spirit reflected there.

*Diet.*—Now, in bringing about the desired change, there are many things to consider. Perhaps first in importance, is the character of the diet. A writer in a health magazine tells of a child that had become so self-willed and unruly, that neither its parents nor anyone else could control it. A friend suggested that perhaps something was wrong in the character of the food eaten; meat and other gross articles constituted its diet. The latter was immediately changed; and the boy was fed on bread and milk, nuts, fruits, and cereals of various kinds. In a short time the unruly temper gave place to a kindly disposition. The unpleasant features that had been such a trial to the parents, gradually disappeared; they had no doubt been the result of gastric and other irritation. Even an adult who is a bad dyspeptic, is anything but sweet tempered and hopeful.

Let the mother see to it then, that her child is properly fed; have a separate table if need be, and allow nothing on it that will irritate the mucous membrane of the stomach and bowels. If our children were fed almost exclusively on fruits, cereals (including rice), these being thoroughly cooked, with a limited supply of nuts, fresh eggs, and other wholesome articles of diet, instead of partaking so largely of meats, fried foods, pastries, and dishes that are highly seasoned, good results would surely follow. Most children (and grown folks) use too much *sugar*, and foods that are prepared with it. Better a hundred times take the sweet in its natural state; there are quantities of sweet fruits, as raisins, dates, currents, figs, etc., and endless ways of serving them. Some of these fruits are very good eaten raw; or they may be steamed, or made into plain puddings. Taken in this way, we get the saccharine

elements in their *organized state*; not separated into their proximate principles, as in the sugar of commerce. Using so much sugar with our cereals and in other ways, tends to irritate the stomach, clog the liver, impair the functions of both, and produce a constipated state of the bowels. We have much to learn on this subject, particularly in feeding the young; if everything is sweetened for them, the appetite will very soon be so perverted that plain food is not relished. We can cultivate a taste for sweet things, simply by eating them habitually. Many a child's appetite is spoiled before it is two years old.

*Stimulants and Condiments.*—One of the worst features about an incorrect dietary, is the use of stimulants and condiments. These in food beget an appetite for *other* stimulants. Meat, meat dishes, rich gravies, sauces, catsups, pickles, anything that tickles the palate, will pave the way for stronger stimulants, and even for tobacco. It has been truly said that toppers as a class are tobacco users, and both are meat eaters. As a rule, they like their meats and other dishes well seasoned; plenty of pepper, salt, hot sauces, etc. Many a boy who has fallen a victim to drink, first had his appetite perverted at his mothers's table. A young man whose food has always been plain and simple, will not readily take to drink or tobacco; he has an instinctive dislike for such things. If only the mothers could realize this, many a boy would be saved. The temperance people will never succeed with their work as they ought to, until they comprehend this feature of the subject. The use of strong *tea* and *coffee* is so pernicious in its tendency, that the very worst results have sometimes followed. *At home*, and at the

mother's table, is the place to form good habits in eating and drinking.

*Clothing.*—Another thing that has much to do with the physical well-being of our children, is the way in which they are clothed. In the construction of garments, even for the young, very little attention is paid to physiological requirements. So true is this, that a modern writer who is also a physician, gives it as his conviction that our clothes and the way we wear them, is the most important and far-reaching of all the causes that produce disease. Our clothes as worn unbalance the circulation, interfere with vital functions, displace internal organs and viscera, and lead to pelvic and other diseases. Surely it requires no abstract reasoning, to understand that the garments we wear should not be responsible for such results.

Unfortunately the violation of health rules in this respect, is commenced in very early life; long before the individual has reached maturity. The mothers themselves are either ignorant of the plainest rules of physiology, or they have been brought up in such a way that they have little or no regard for them. First of all, an intelligent mother should see to it that nothing is worn which would in the least interfere with the action of any organ, muscle or limb; every part should be allowed to perform its function normally. Boys are sent to gymnasiums, where they can be developed physically. But the girls, as ordinarily clothed, are in no condition to take such exercises; they have local weaknesses and impaired physical functions, so that many of them are incapable of making vigorous exertion of any kind; they can hardly climb a stair, or walk a mile briskly, without feeling the worse for it. If they went to the gymnasium and took the exercises

that are recommended for their brothers, it would probably do more harm than good. A girl who has been wearing a corset for some time, or a snug waist with whalebones in it, has so crippled the *breathing power* that there is not a drop of pure blood in her body. The intercostal muscles are sub-paralyzed, and she cannot expand the chest to its full size. The abdominal muscles are weakened, and there is sagging of the viscera, especially below the diaphragm. Often too the pelvic organs are pressed upon, congested, and menstruation is more or less interfered with, causing pain at the monthly period. In many cases the function of ovulation, which ought to be perfectly natural and free from pain, has become so perverted that there is a profuse flow, which is hemorrhagic in character. The girl's life is drained away, and sooner or later her general health will suffer.

What is the mother thinking about, that her daughter is allowed to drift into such conditions? Too much attention is given to what is termed society and its requirements, and too little to the needs of the vital organism. It is indeed high time that we returned to the simple life; to the habits and ways of living which will give our *bodies* a chance.

When mothers are thoroughly alive on this subject, they will not only instruct their daughters in the laws of health, in diet, dress and everything else, but they will themselves set a wholesome example. As to clothing, it should be so worn that the air will circulate freely between the garments and the skin. The soft abdominal walls should not be pressed upon, displacing internal organs and producing congestion. The weight of the clothing should rest upon the shoulders, not upon the abdomen and hips. The skirts should be attached to



waists by means of buttons, or joined to skeleton waists. No more skirts should be worn than are necessary for comfort. A great mistake that is made in the matter of dress, is in wearing too much clothing, particularly in warm weather. Both men and women err in this respect. Overheating the body enfeebles it, and congestion of the great nerve centers is not unfrequently produced.

Another mistake is in not covering the body evenly. Often a woman if she suffers from cold, simply hangs another skirt about her waist; this still further unbalances the circulation, and pelvic congestions arise. When more clothing is needed, it should be distributed *evenly* over the surface of the body. Not so much clothing is required to keep the individual warm, provided the whole body is equally protected. Putting thick furs about the neck and shoulders, may protect that particular part; but what about the feet and ankles? There is a *philosophy* in this matter of dress, that it is well to know and heed.

In regard to clothing, the same rule holds, all the way through; it should cover the body evenly, be made of material that is rather light and porous, and offer no impediment to the bodily functions; every limb and muscle should do its legitimate work without let or hindrance. Most mothers clothe the very young children rather sensibly, particularly the little boys. But the girls too should be dressed in such a way as to keep the circulation in good balance; if the hips are covered too much (as with full skirts), or if the extremities are underclad, the pelvis will become congested; and before the young girl is grown she will have laid the foundation for pelvic diseases. More than half our girls are suffering in this way; and neither

they nor their mothers have apparently the slightest idea that the clothing has anything to do with it. The aching head, the flushed cheeks (or they may be pale), the languor and weakness, these are signs that something is wrong. Often there are stomach troubles, constipated bowels, etc., due it may be to an incorrect dietary. Most people have not as yet learned, that their eating has much to do with their ill health. When we come to study the actual needs of the system, we shall eat to live, not merely to gratify the palate. The clothing too will be constructed in accordance with the laws of health, rather than the dictates of fashion.

There is another reason why the little girl should be sensibly dressed; she needs exercise in the open air and sunshine, as well as her brother; and the garments she wears should not in the least interfere with her outdoor life. So many mothers are afraid that their daughters will not be ladylike; that they will become tomboys. There is vastly more danger that these girls will fee the doctors, become sickly wives, suffer in childbirth, and fill premature graves. If the epitaphs on the tombstones would give the *causes* which produced death, what a history we should have in our cemeteries! For example, this young woman died of tuberculosis, brought on by tight lacing and indoor habits. That individual was the victim of overeating, and of indulging in foods that were not conducive to health. The real causes of our bodily ailments are usually kept in the background, like skeletons in our closets. Even the physician is not inclined to be specially inquisitive on these subjects. He thinks it his duty to do the prescribing; not to find out the causes of disease and remove them.

As enlightened people, we ought to be ashamed to

get sick. But are we? Some young girls are so foolishly brought up by their mothers, that they rather pride themselves on looking pale and delicate, and showing hands that are bloodless. What sort of rule are they following, in which common sense is ignored? Never until we have turned over an entirely new leaf, and with a determination to live in accordance with physiological requirements, shall we reach that high standard of intellectual and even moral attainment which should characterize the race. Women especially, will never take their proper places in the world's work, until they understand the laws of life and health and obey them. As things are at the present day, they enter the race handicapped; and in their efforts to perform the functions which nature has allotted to them, they fail of their mission.

Before the young girl is grown, a foolish mother puts a corset round her waist and cripples her breathing power. This of itself is enough to consign the daughter to physical destruction. Then come the skirts, the strings about the waist, the belts, and the shoulders perhaps relatively bare. To complete the outfit, snug shoes and stockings are worn; the girl walks (or rather totters) on high heels, throwing the spine and the entire body out of proper balance, so that her gait is anything but normal. No wonder our schoolgirls cannot climb the stairs, nor carry their satchel of books, when every natural movement of the body is handicapped like this. And what a comment on the intelligence of the mother, who will not only consent to such physical outrage, but encourage the daughter in it.

Not until the mothers in this country have waked up to the fact that success, whether in public or private

life, depends upon the perfect development of the body, will women be a credit to their sex. No matter what calling or occupation is chosen, there must be a *sound body* to begin with; a sustaining physical force, which underlies the intellectual and moral. Whether as wife, mother, or breadwinner, a good physical development is indispensable; and the young woman who starts out on any other basis, may as well write *failure* in advance. How important then, that the mothers by every means in their power, give their daughters a fair chance in the race of life. The essentials can be named in a few words: A correct dietary; physiological clothing; pure air; healthful exercise; sufficient bathing; regular hours of rest and sleep; competent teachers in the schoolroom; and associates who will not be a hindrance to the objects sought.

*Early Associates.*—Just here, is where much of the trouble begins. Parents who have correct ideas in regard to the training and education of their children, may give proper instructions to them; but if they associate with young people whose habits are at variance with these teachings, much valuable work may be speedily undone. It is hard for boys and girls to live in a community where the trend is all the other way, and not be influenced by the environment.

If a young lad falls in with a class of boys who use tobacco, smoke cigarettes, and have other bad habits, he is liable to be led astray. In some of our schools and seminaries, habits of secret vice prevail; and before the parents are aware, untold mischief has been done. The careful mother will therefore be on her guard, and note the influences that surround her child. One of the first things for her to do, is to get the entire confidence of her children; she should be a companion to

them, as well as a parent. They should feel free to tell her everything that transpires, in the schoolroom and out of it. She should also explain to them the functions of the various parts of their bodies, and how these may become diseased by injudicious treatment. There is a good deal of literature on this subject, most of it written by thoughtful parents, which may either be read aloud by the mother or by the child itself. A boy or girl who is old enough to understand, will not only take an interest in the matter, but reason it out for himself. A child thus forewarned is forearmed, to a certain extent at least.

Whatever the danger that may cross the path of childhood, it is better to point it out beforehand; and there is no one so well fitted for this duty, as the mother. Lessons in hygiene and sanitation can be taught at a very early age, and a strong impression made upon the youthful mind. Where the parents do their duty and the teachers the same, the dangers that beset our youth will be greatly diminished. There is such a thing too as creating an enthusiasm, in matters pertaining to cleanliness and health. I have more than once overheard children who had had superior advantages, instructing others, on divers subjects relating to health and hygiene. And really, one would be astonished to see how much a boy or girl eight or ten years old actually knows about these things, and how well the lesson has been learned.

The youthful mind is exceedingly impressionable, as well as imaginative, and very few things escape its notice. The facility with which a child learns what is harmful, is proof that lessons of higher import can also be comprehended. It is a good plan always, in giving instruction to the young, to state the reasons

why certain things are recommended or forbidden. Tobacco for instance, has a tendency to produce heart disease; and smoking is believed to predispose to cancer. The excessive use of coffee has been known to lead to insanity. The habitual use of anything containing *tannin*, tends to constipate the bowels; and this condition predisposes to cerebral disease. It is the mother's duty to keep well posted on matters pertaining to health, so that she may be prepared to instruct her children properly. The teacher in the schoolroom should do the same thing.

*Bathing.*—Years ago, when hygiene and sanitation were relatively in their infancy, very little attention was paid to keeping the skin clean; and in some families, the bathtub or its equivalent was practically unknown. But in these later times, things have changed. The danger now is in falling into ruts. Some advocate the *cold* bath, and believe it is good for everybody. Others do not approve of this, and so discard it altogether. Both are in the wrong; when we come to study the needs of the vital economy, we shall have to recognize individual differences. In bathing, as in everything else, there are certain things that are necessary for our physical comfort and welfare. For a child that is strong and vigorous, his surface reaction prompt, a cold bath may be just the thing, particularly if there are feverish conditions. But this same bath will not do at all for a child that is feeble; even if he reacted after it, there would be a great waste of vital force.

The rule to be observed in bathing, is this: Have the character of the bath suited to individual needs. The feeble, the delicate, whether young or old, require less bathing than those who are robust. The water too should never be so cold as to shock, nor the bath be

continued too long. The temperature of the bath, its frequency, and the time to remain in it, are things to be determined by the conditions that are present. A strong healthy child may enjoy a cold bath, and not be the worse for it. But the same cannot be said of one that is feeble; he will object to the cold water; it shocks his nervous system.

Again, the strong child may have a bath every day. For the feeble one, every two or three days will be often enough, particularly if he is fed right. The instincts of the child itself will usually be a guide in matters of this sort. If the bath is enjoyed, the reaction good, we may feel assured that no mistake is made. But if half an hour after the bath the lips look blue, and the extremities are chilly, then something is wrong; either the bath was not needed, or it was not of the right kind. A child with gross habits in eating, will require more bathing than if he dieted correctly.

There is one thing that every individual, big or little, will like, and it will do him good. That is the sun bath (see page 399); and it seems a pity that every house cannot be arranged for it. Feeble or scrofulous children are particularly benefited, by exposing the surface of the body to the sun's rays. Even the air bath (see page 398) is excellent; it tends to harden the individual, and prevent him from taking cold. A good time for it is in the morning on rising, or after a water bath; some light form of exercise may be combined with it.

*Exercise.*—As soon as a child is big enough to walk with ease, some forms of outdoor exercise should be planned for him. This is all the more necessary, if the little one is rather delicate. Nothing will more surely

of health, they would go actively to work to remove some of the causes of this physical weakness. The fathers, too, if they were interested in health topics, would make haste to leave off the tobacco habit; and they would advise their sons to let the weed alone. Not only so, they would look well to the character of their diet; so long as meat and highly-seasoned dishes are *staples* on our tables, men will die in middle life with Bright's disease. Every now and then a young man scarcely twenty years of age, falls a victim to this malady.

*Domestic Training.*—Where there is a family of boys and girls, the mother should make it a point to train each of them in doing things about the house. This will not only lighten her own labors, but make them more helpful in after life. Many a man has actually suffered because he was not trained in youth by a careful mother in certain household duties. I pity the man or boy who can not mend a garment, or even sew on a button. He should know how to make a bed, tidy a room, and get a meal if need be. A husband with a sick wife, and no immediate help in reach, is sometimes put to great disadvantage by not knowing how to perform even the simplest household duties. Some mothers make a mistake in teaching their boys that it is not manly to assist about the house. The daughters too have been instructed that it is not ladylike to know how to wash, iron and cook. Girls who have not been properly trained by their mothers, are very helpless when they come to have homes of their own. Many of these girls have lived to blame their mothers severely for neglected duty; their own servants have taken advantage of their ignorance, declaring that they knew nothing about keeping a house.

When we have an industrial department in all our



schools, each boy and girl will be instructed in the things that pertain to our everyday life. We understand that an individual who expects to be educated in books, must learn the alphabet, and also the sounds of letters. In other words, he must be drilled in the elementary principles. The same is true of that part of our education which we do not get from books; the things that are essential to our physical existence. Many a man has gone hungry (some women too), from not knowing how to make a loaf of bread. It is the helpful individual who will get on well in the world; he is able to turn his hand to almost anything, and knows how to make himself useful.

Speaking of industrial schools, there is a special mission which they ought to perform for the rising generation. Nearly every individual is by nature and environment better suited to do some things than others; though often a parent is at a loss, in trying to find out just what his child is fitted for. The particular vocation in which one will succeed, may not be at all adapted to another. But in an industrial department in which many things are taught, there is a chance to find out what the boy or girl can do best. This is a great step in advance; and it will to some extent simplify the duties that devolve upon the parents. To know what a boy is made for, is half the battle. Often he does not know himself, until he has tried his hand; and certain it is, that every individual is not equally fitted for the same thing. In selecting a trade, either for the boy or girl, this matter is often neglected too long; the work of training should begin in early youth, while the muscles, especially those of the hand and arm, are pliable. It is well known that singers who have made their names famous, began their work in early

life. It is also a common remark, that he who changes his occupation after he has reached middle age, very rarely succeeds.

In our colleges and universities, it has taken several generations to find out that every pupil did not need to study Greek and Latin. Some will succeed best in the higher mathematics, having a special talent in that direction. Others are gifted in the acquisition of languages; still others make fine historians. What folly then to put every individual through exactly the same drill. Within certain limits, of course, there are studies which all should pursue; these are in a sense elementary. But beyond that, as we reach the higher branches, there is room for great discrimination; and the individual himself is often the best judge of the things that are suited to his needs. This fact is now recognized to a certain extent, especially in the more progressive colleges; a young man's time is not thrown away in the pursuit of studies for which he has no talent. When the needs in this direction are more fully comprehended, the differentiation will be carried still farther; either that, or there will be special institutions of learning for the study of particular branches. Moreover, if co-education is to become a permanent feature in our schools and colleges, provision will be made for the needs of both sexes. Certain branches of study will be taught in common; but a discrimination will be made as to others, doing this in such a way as to meet the requirements of all.

## CHAPTER XIX

### INFANTILE DISEASES

A STANDARD work of over 1100 pages, is devoted exclusively to diseases of infants and children; from which it would seem that these little people are not only afflicted with many of the ills found among adults, but with others peculiar to themselves. Judging from this and other works on the same subject, the life of the infant is beset with dangers from the time it draws its first breath; and if the child ever reaches maturity, it must be after many severe struggles. By actual count of the diseases of infancy and childhood, as given in the work named, there are no less than one hundred; to say nothing of minor divisions under the various headings. Such an array of physical ailments, is enough to discourage almost any parent.

It must be said, however, that those who believe in the system of hygiene, take an entirely different view of the matter. With them sickness or ill health among the little ones is the exception, not the rule. In these families, the child's *materia medica* is a very simple affair; it consists mainly of three things: a syringe, a wet towel, and a correct diet. In nine cases out of ten, a sick child if taken in the start needs but little in the way of treatment; evacuate its bowels, give it a bath, and envelop its trunk in a warm wet compress; then feed lightly, or not at all. The instincts of the child itself will do much to preserve it; if very sick, it stops feeding

till the appetite returns. Where the attack is mild, the little patient if in the habit of eating, as well as nursing, will take only the breast. Nature comes to the rescue, not merely in human beings, but in animals. Take a horse, sick with influenza; he immediately stops eating. He fasts strictly (though he will drink water) until he begins to convalesce. Then he will nibble at hay a little; or if you offer him an apple or apple peelings (something juicy and cooling), he takes it greedily. But heartier food is stubbornly refused, until the attack is over. There are indeed many useful lessons which we can learn from the lower animals.

Mothers who are not familiar with hygiene, often make grave mistakes when their babies are sick. Generally, one of the first things they do is to close the windows and doors, even if the child is burning up with a fever; then if it cries, they offer it something to eat. They seem to forget that when the infant is sick, the digestive organs are not in a condition to take care of food. Where there is a fever, every mouthful swallowed simply adds fuel to the flame. In the child's *materia medica* above described, the needs of the vital organism are pretty well provided for. By using the syringe, objectionable matter in the intestinal tract is removed; and the wet towel or compress tends to allay any inflammation that may exist. Abstinence from food will give nature a chance; when the appetite is wanting, this is a hint that vitality has enough to do to take care of what is already in the system, without being taxed with anything more. Fresh air, fasting, and pure water, are Nature's trinity of cure; and in the case of young infants, very often not much else is needed.

About the *worst* thing that can be done if a baby is

sick, is to give it drug medicines; hundreds and thousands of children are killed in this way every year—doctored “scientifically” not in accordance with the principles of hygiene. A very small dose of medicine will sometimes prove fatal to a baby; it is not used to being drugged, and a little too much of the remedy employed, will “snuff out the infant’s life.” Dr. Gilman says, that a single drop of laudanum will often kill an infant. Beware then, when the baby is sick, how you dabble with drug poisons.

### *Marasmus.*

By looking over the burial permits in the daily papers, it will be seen that many infants die of *marasmus*. But what is this disease? If we visit a child’s hospital in almost any large city, we shall see plenty of babies dying of it—slowly wasting away. Most of these are badly fed, and perhaps *every one of them* has been fatally dosed. I once saw a poor little boy in a New York hospital, that moved my heart to pity; he was a living skeleton, nothing but skin and bones. The child was three years old, and weighed only a few pounds. I said to the nurse, “Pray, what is the matter with this baby?” She replied, “It has *marasmus*.” Since then I have seen many similar cases, the emaciation being due to much drugging. If you want to render an infant hopelessly ill, *give it drug medicines*. The latter will destroy the function of the liver and other organs, impair the digestion, and the child, if it survives, will be physically ruined for life.

The only efficient remedy for *marasmus* is to feed correctly, and let drug medicines alone. Take the baby out into the open air and sunshine, and let it have the benefit of nature’s healing agents. Keep the skin

clean by sufficient bathing, and encourage the nutritive process by giving gentle but thorough hand manipulations over the entire body, once or twice every day.

### *Infantile Paralysis.*

This affection is described in nearly all medical books, and by consulting them you will get a full account of it. Both legs and both arms may be partially paralyzed, or only one of them. As a rule, the leg suffers more frequently than the arm; and the muscles below the knee are more disabled than those above. Da Costa states, that there is often a decided improvement within six months from the onset; though some loss of power may be permanent. The affected muscles usually begin to waste away, after the paralysis has lasted a month. Quoting from medical authorities, the *causes* of the disease are obscure. Let me say, however, that it is not met with among hygienists; and its development is no doubt due to the use of drug poisons.

The *treatment* is the same as for marasmus. Discontinue the drugging; then feed correctly, and endeavor to build up the general health. A simple dietary, fresh air and sunshine, gentle hand rubbings over the surface of the body, and particularly to the affected muscles, these are the leading measures. If the liver and spleen are considerably enlarged, apply a warm wet compress over them and around the body, covering with a single thickness of dry flannel to keep in the moisture. Put on this compress at intervals, and take it off before it gets dry. Then rub the skin briskly, to promote capillary circulation. See that the extremities are kept warm; and clothe the infant enough for comfort, but not enough to debilitate it. Feed rather lightly, no more than can be well digested; and

if the bowels are constipated, give enemas of tepid or warm water (see page 420) as needed.

[www.libto.org.cn](http://www.libto.org.cn) *Rickets.*

In what is termed rickets (also called rachitis), the system is badly nourished; to such a degree indeed that the very bones are not well developed. These soften and enlarge, owing to a want of earthy matter in the osseous tissues. There is a flabby condition of the muscles, a sluggish state of the circulation, and the nervous system is enfeebled. The disease is usually met with in early childhood, though it may be congenital. As a rule, it manifests itself between the sixth and twelfth months after birth. It prevails largely among the very poor.

The principal *causes* may be summed up in a few words; bad air, bad food, and want of cleanliness. This of itself should indicate what the *treatment* should be; supply wholesome food, give hand rubbings to facilitate nutrition, and try to build up the general health. Keep the skin clean by sufficient bathing, and take the little one out of doors as much as possible, into the open air and sunshine. In cases that are congenital, the causes of the disease were of course operative before the child was born.

#### *Thrush.*

A very common disorder among infants that are not properly fed, is *thrush*; or aphtha, as it is sometimes called. The disease is seldom met with after the child is two years old. It is *caused* by bad feeding and indigestion. The mucous membrane of the mouth is dark red in color, at least in patches, and little white points appear which rapidly coalesce. The areas so formed

resemble curdled milk, owing to their soft consistency. The mouth is usually swollen and tender, and the breath fetid. The lips too are often swollen, and there is pain on nursing; the saliva is somewhat increased.

The *treatment* is about as follows: See that the diet is strictly correct, and do not feed too much. If the child nurses, the mother should be careful as to what she eats. Wash the mouth out two or three times a day with a saturated solution of boric acid; or boric acid and glycerine may be employed. For larger children, one part listerine and two of water makes a very good wash. After nursing, the mouth should be thoroughly cleansed, using either a soft sponge, or a bit of linen old and soft. Keep the skin clean by frequent bathing, admit plenty of fresh air, and attend to the other needs of the system. In good weather, take the baby out of doors. It will be seen that the removal of the causes which produce the disease, will have much to do in effecting a cure.

#### *Bad Colds.*

If the child is properly cared for, in diet and everything else, it will hardly ever have a cold. Keeping the rooms too warm, or living in a stuffy atmosphere, often gives rise to colds and influenzas; or wearing too much clothing will debilitate the skin, and the mucous membrane is apt to suffer. As a preventative measure, admit plenty of fresh air and sunshine into all the rooms; and on fine days take the little one out of doors. Bathing it frequently in tepid water, and rubbing the skin well afterward, will have a good toning effect; and leaving the child undressed for some time after the bath, is excellent. These are some of the measures to be employed, not only in preventing a cold,



but in curing it; make the skin active, supply the lungs with plenty of fresh air, and the respiratory organs will heal more rapidly. Also feed lightly, allowing about half rations until the patient is better. If the bowels do not move freely, give an injection of tepid or warm water (see page 420). Usually when the baby has a cold, the stools are greenish in color and rather loose; the tendency is to "throw off the cold" in that way. If the bowels are too loose, small injections of cool or cold water will tend to check the discharges. With proper care, recovery should be prompt.

### *Sore Throats.*

For an ordinary sore throat, treat very nearly the same as for a cold. The full warm bath will promote action in the skin, and the throat will heal more rapidly. A little *derivative* treatment, in the way of sitz and foot baths (see pages 384 and 386), is an excellent thing, provided the child is not too young. Or warm compresses may be applied to the feet and legs, especially at night, which will draw the blood away from the congested tissues. Toasting the feet and legs before a grate fire, will also help to shorten the attack. Where there is much soreness in the throat, and particularly if it feels hot to the touch outside, a cold compress may be worn at intervals; this should be covered with a single thickness of soft dry flannel. Remove the compress before it gets dry, sponge the part with tepid water, dry it well, and then rub briskly with the hand.

### *Loss of Appetite.*

If the appetite fails, this is an indication to feed less; nature gives the warning, and we should heed it. Eat-

ing too much, especially in hot weather, will often take away the desire for food. Breathing a stuffy or impure atmosphere, has a tendency to dull the appetite; and torpor of the skin, whether from bad eating or insufficient bathing, may have a similar effect.

In the way of *treatment*, a partial fast for a few days, is excellent in these cases; diminished rations, or lengthening the time between meals, will as a rule very soon be followed by a feeling of hunger. In the meantime we should increase the activity of the skin; a sponge bath every morning, or a full bath every other day, will promote cutaneous depuration. The bath should be followed by thorough hand rubbing from head to foot. Then in half an hour take the child out of doors, and give it plenty of fresh air; wrap it carefully if the weather is cool. Babies when sick or ailing, should be treated very much like grown people when similar conditions are present.

#### *Abnormal Appetite.*

When the appetite is ravenous, whether in children or adults, it is usually a sign of indigestion; either the food was not of the right kind, or too much of it was taken.

The *treatment* required is not unlike that prescribed in the last article. Either withhold food entirely for a day or two, or give half rations; let the stomach have a rest, until it can do better work. Keep the skin clean by sufficient bathing, and take the child out of doors every day; plenty of fresh air and sunshine will have a good effect. A few simple rules for the management of the infant, will be all that is necessary. Regularity in the times of eating, and strict

attention to the quantity and quality of the food, will prevent abnormalities in the appetite.

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*Indigestion.*

When food is well digested, the stomach will not reject it. If the baby throws up its milk, you may be sure that it is fed too often or too much, or the food is not of the right kind; either that, or something has interfered with the digestive process. I have seen a father take his child after it had nursed, throw it up and catch it in his hands and otherwise play rudely, which of course calls the blood away from the stomach, excites the little one nervously, and tends to produce indigestion. After the infant has taken food, it should remain quiet for some time, perhaps close its eyes and go to sleep. Carelessness in this respect, may make the child a dyspeptic. Getting the surface of the body chilled after eating, will also cause indigestion, and it may produce cramps.

Many babies are made sick, because of *sexual indulgence* in the parents. It has been said repeatedly in these chapters, that while the mother is nursing there should be no excitement sexually; the mother's duty to herself, and also to the child in her arms, makes this imperative. The strength of the mother is sufficiently taxed, not only in taking care of her infant, but in giving it the proper nourishment, without an extra demand being made upon it through the marital relation. Indulgence of this kind impairs the quality of the mother's milk, and often the child's stomach cannot tolerate it; nausea is produced, perhaps vomiting, and the little one suffers.

The leading symptoms of indigestion are acidity of

the stomach, flatulence, and there may be cramping, either in the stomach or bowels.

The *treatment* will vary somewhat, owing to the causes which have produced the indigestion. First of all, these should, if possible, be removed. Laying a hot flannel over the stomach and bowels, will sometimes afford relief. Or a little pressure made with the warm hand over the abdomen will often remove the gases, either through the stomach or bowels, and the pain will cease. Or a bag partially filled with hot water and placed over the stomach, will have the desired effect. Toasting the feet and legs before the fire, is also a good thing. If the child is old enough, drinking a little hot water will make it belch, and ease the pain. Where the trouble is in the bowels rather than the stomach, a full injection of tepid or warm water (see page 420) will generally remove the offending substance, and put an end to the griping. Should the pain persist repeat the injection, giving it as hot as can be retained. You may also wring a cloth out of water that is quite warm, and apply it over the abdomen; this can be kept warm by means of a hot-water bottle.

The *preventive* measures consist in dieting correctly, rather abstemiously if need be, and avoiding any cause or causes which may produce the indigestion. A child (or a grown person) who has taken drug medicines, is apt to be more or less dyspeptic; the liver and other organs are weakened in their functions, and the food is not properly digested and assimilated.

#### *Colic.*

A very common disorder with babies, is what is termed *colic*. This is a griping in the bowels, and its immediate cause is the accumulation of gases, pro-

duced by undigested food. If the child is not properly fed, it will almost certainly be subject to colic. Or if a nursing mother is not careful in her diet, the milk may be of a quality that the infant cannot digest, and gases will be given off. To avoid this trouble, the mother should eat only such foods as are suited to her needs, and not partake of too great a *variety* at one time, especially vegetables. She should not as a rule eat fruits and vegetables at the same meal. Neither should she take vigorous exercise soon after eating, which would of itself interfere with the digestive process. Often the mother does not suffer specially with indigestion, but the baby gets the full effects of her dietetic transgressions. Or if she exposes herself unduly, as in chilling the surface of the body, the infant will in a few hours afterward exhibit signs of a cold, the mother perhaps escaping.

A severe colic is often the result of derangement of the liver; and when mothers are badly nourished during pregnancy, the child may be born with imperfect digestion. Many mothers eat too much sugar, and too much starchy food; the system is surfeited with these, and the quality of the milk is impaired. Or they partake of highly-seasoned food, and the babies suffer in consequence.

In *treating* for colic, there are several ways of affording relief. One of the simplest is pressing the hand upon the stomach and bowels, which will often cause the gases to be expelled, and stop the pain; have the hand *quite warm* before applying it. In the meantime, see that the extremities are warm; toasting the feet and legs before a fire, or wrapping them in dry hot flannels, will have a good effect. Colic is sometimes caused by tossing the child about and getting its legs chilled.

Another simple treatment, is to heat several folds of flannel very hot, and lay them over the abdomen; these may be kept warm by means of a hot-water bag. Where the attack is severe, give a full enema (see page 420) of water as hot as can be retained; this will often bring away the gases, and the griping will cease. Or, wring a cloth out of hot water and apply it over the stomach and bowels, which will relax the constricted muscles, and allow the gases to escape. The hot-water bag will also be of service here, in keeping the cloth sufficiently warm.

To prevent a return of the attack, avoid the cause or causes which have produced it. Very special attention should be given to the character of the child's diet; and if it nurses, the mother should be equally careful about what she eats.

#### *Diarrhœa.*

In simple diarrhœa as it occurs in infancy, there are frequent and copious discharges from the bowels; and there may be a sense of weight and uneasiness in the lower part of the abdomen. The tongue is coated, the breath foul, and there is more or less flatulence. Nausea and vomiting are occasional symptoms. The disease may become chronic; and now and then it alternates with constipation.

The principal *causes* are bad water, overfeeding, and improper or indigestible food. In cities, a poor quality of milk is a leading factor. Often too the child eats unripe fruit, stale vegetables, and other things which it cannot digest. Giving *meat* to children, especially before their teeth are well developed, has a tendency to produce diarrhœa; and dosing the little ones with drugs, will still further complicate the disease. Where the

bowels are more or less congested or inflamed, getting chilled or taking cold is an exciting cause.

To treat diarrhoea successfully, we must remove the cause or causes which led to it. Give one or two full enemas of tepid or warm water (see page 420), to bring away any undigested material that is in the intestinal tract. Then apply a warm wet compress over the stomach and bowels, which will allay irritation in the mucus membrane. Make the compress of old crash toweling, something loose and porous, that will hold the water readily; it should be covered with a single thickness of dry flannel, and renewed before it gets dry. Let the patient fast for a little; then give half rations, feeding carefully, and the diarrhoea will very soon disappear. If there is much irritation in the lower bowel, or if the discharges are very copious, inject a little cool or cold water (or thin starch) into the rectum after each passage; this will strengthen the parts, and facilitate a cure. In the meantime, keep the skin normally active by giving a bath every day or every other day, this to be followed by thorough hand rubbing over the surface of the body.

Babies that are dieted correctly and not overfed, are very seldom troubled with diarrhoea.

### *Dysentery.*

Dysentery, sometimes called bloody flux, is a far more serious disease than the one we have just considered; and if not taken in time, it will require much longer to effect a cure. The discharges are loose, and often streaked with blood and pus. There is also a good deal of straining, and a desire to remain long at stool.

Gripping and pain in the colon are frequent symptoms, and there is more or less irritation in the rectum. The tongue is white at first, then smooth and slimy. The temperature rises above the normal, and the urine is scanty and high colored.

The *causes* of the disease are essentially the same as in diarrhœa, though often they have been in operation for a longer time. Bad water and bad milk, are probably the most frequent causes; though dietetic errors of various kinds will predispose to the disease. Undue exposure to cold, or sudden alternations of temperature, are exciting causes. Dysentery among children prevails in the hot months, and sometimes in the fall.

The *treatment* should be commenced promptly. Evacuate the bowels thoroughly with injections of tepid or warm water (see page 420), and after each passage throw up a little water or thin starch that is cool or cold; if this cannot be retained, it will at least cool the parts and tend to allay inflammation. For the pain in the bowels apply hot fomentations (see page 413), but do not continue them too long at one time. The warm wet compress made of several thicknesses of old loose crash, should also be worn, covering it with dry flannel. If it produces chilliness, keep it moderately warm by means of a rubber bag partly filled with hot water, and so adjusted that it will not overheat or burn the child. Change the compress frequently, and do not let it get dry. If there is a good deal of soreness in the bowels, the compress may have to be worn most of the time until the inflammation is reduced. When the skin over the bowels feels hot to the touch, a compress that is cool or cold will often afford greater relief than a warm one. The temperature that has the most quieting effect, is generally the one that is best.



Where there is much fever, sponge the body with tepid water two or three times a day, or as often as needed. If the patient is not too sick, and is old enough to take it, the sitz bath (see page 384) is excellent, say once or twice each day. You may set the child into the water (hips, legs and feet), having it deep enough to come well up over the abdomen. The temperature of the bath should not be so cool as to shock, nor so warm as to increase the fever. Often when the latter runs high and the surface heat is well diffused, the wet-sheet pack (see page 406) can be employed; it may be warm or tepid, according to the amount of heat that is present. The pack should never be given if the head is very hot, or the extremities are cold.

If the child nurses, it will probably regulate its own diet, taking but little nourishment until it is better. For a bottle-fed baby, endeavor to find out the kind of food that agrees with it best, and give this in limited quantity. In some cases, a little rice gruel well cooked may take the place of milk. Where the attack is severe, or the patient is not seen until the disease has made considerable progress, entire abstinence from food may be necessary until the febrile and other symptoms subside. Then feed lightly, beginning with barley water, rice gruel, and other articles of diet that are exceedingly simple. Slippery-elm bark pulverized and soaked in water with frequent stirring, may be given at intervals in teaspoonful doses. The white of egg beaten in water (or milk) is also good. When something a little more substantial is required, a very thin oatmeal gruel well cooked and strained, may be given a little at a time. Nothing should be swallowed that is in the least irritating. Allow from the first, all the water, either cold or hot, that the patient will take; it must be soft and

pure. Foul or impure water will not only aggravate the disease, but may be the cause of it.

A lady physician who has had much experience with sick children, prescribes the following diet in dysentery: "First, give no food at all until the worst is over; only cool water (boiled if necessary), rice water, or toast water. As the child begins to convalesce give barley water, adding a small quantity of milk, and increase the amount of food as the stomach is able to manage it. Robinson's Prepared Barley is good; make a thin gruel, and mix with milk. Whey does well for a change; but it is rather a poor food to use all the time."

As the patient improves, give less treatment; gradually increase the amount of food taken, but be exceedingly careful both as to quantity and quality. Admit plenty of fresh air into the room night and day; and as soon as the child is strong enough, take is out into the open air and sunshine.

### *Cholera Infantum.*

Many children die of this disease, especially in our large cities. The *causes* are very nearly the same as in diarrhœa and dysentery—foul water, bad food, and overfeeding, these are the prominent etiological factors. In most cities, an impure quality of milk has much to do with the mortality among infants. Where the children are older, unripe or half-decayed fruits, stale vegetables, and meats stale or otherwise of bad quality, are often the causes of the disease. It prevails chiefly in hot weather. Giving drug medicines to infants and children for every little ailment, is a predisposing cause of cholera infantum and other intestinal troubles,

The leading *symptoms* are vomiting and purging (these recurring at intervals, or they may be nearly constant), and spasmodic pain in the stomach and bowels. The surface is cool or cold, but the temperature of the body runs high; it may range from 102° to 107°, or 108° F. before death. Very soon there is great prostration, with a rapid and feeble pulse. The bowels may be bloated, or sunken; the extremities are cold. The discharges at first are greenish in color, then thin and watery; sometimes they are very fetid, and have a musty odor. The urine is scanty, or it may be completely suppressed. There is usually great thirst, and everything swallowed is vomited up. In rare instances, the temperature falls below the normal; the child lies in a stupor with its eyes half open. In many cases, however, the symptoms are not so severe; often they are greatly aggravated by giving drug medicines.

The indications for *treatment* are very nearly the same as in dysentery. There is something in the intestinal tract which must be removed; hence the use of full injections (see page 420), as warm as the patient can retain. The intense griping and pain will call for hot fomentations (see page 413) over the abdomen, these to be continued until relief is afforded. Sometimes the offending substance in the intestinal tract, is hard to remove; it is too high up to be reached by injections, until the *parts are relaxed*. In such cases, envelop the trunk in a hot blanket pack (see page 410), and keep the patient in it until the pain is not so severe. Then give a high injection (see page 424); and carefully manipulate the bowels while the water is retained. If this treatment is successful (and if it is not, repeat it) the bowels will probably move in a short time, passing a quantity of dark-colored fecal matter thrown off from

the liver and intestines; this matter is often foul-smelling and acid, and its removal affords great relief.

If the offending substance is not pretty well gotten rid of, the cramping in the bowels may return; this will probably call for a repetition of the treatment already administered, or a part of it. Often the abdominal walls have to be thoroughly relaxed, before the matter lodged in their folds can be wholly removed. It must be said, however, that these cases are more frequently met with in older children (or adults), and the disease is then termed *cholera morbus*.

As a general thing, a simple case of cholera infantum can be relieved by the following methods: Throw up a full injection of tepid or warm water (repeating it if necessary), apply the hot compress over the stomach and bowels, and give sips of ice-water where there is much thirst. It may take twenty-four hours or longer, to secure permanent relief. A good plan is to give a small injection of cool or cold water after each passage; this will favor contraction in the mucous membrane, and also help to reduce the temperature of the body. In protracted cases, you may put the child once a day when the fever is highest into a tepid sitz bath (see page 384), and rub the chest, back and abdomen with the hand. Continue the bath ten to fifteen minutes; then dry well, and follow with surface rubbing to secure a good reaction. Keep the extremities warm at all times.

Food must be entirely withheld until the patient is convalescent. When you begin to feed, the greatest care is necessary. For a child several months or a year old, rice gruel boiled three hours and strained through a cheesecloth is excellent. For younger children, milk considerably diluted (say two or three parts water to one of milk) is usually recommended, giving it in very

small quantities. If this is thrown up, wait a while before trying anything further; though if the child will take it, a little warm or hot water may be swallowed. Where the milk does not set well, beat the white of an egg to a froth, dissolve it in cool water, and give a little of that. It is safe to keep food away until the appetite returns, be the time longer or shorter; there is not the slightest danger that the patient will starve. As soon as the stomach is in a condition to receive food, nature will make that fact known.

### *Constipation.*

In later years, constipation seems to be a very frequent disorder, even in young babies. Mothers are at a loss to account for it; though the wonder is, that there is not still more of this trouble. The character of the diet is the principal difficulty; either the mother does not live correctly herself, or the baby is not properly fed.

As to *causes*, there is no lack of them. Where the child nurses, the mother's milk is not of the right quality. This may be due to the kind of food she eats, or to something in her habits which produces indigestion. If she is given to much excitement, or if her physical powers are exhausted from overwork, the milk will not be suited to the infant's needs. When we consider what mothers eat, at their own or other tables, it is not surprising that the baby becomes constipated. I have seen a mother sit down to dinner, take the full course, and finish with a very sweet dessert. Then she hastens to her baby, nurses it, and in a short time its stomach is cramping. The child is suffering from indigestion; gases are given off, and constipation follows. Not until mothers realize the importance of living in accordance with physiological requirements, in diet and

everything else, will the babies digest their food as they should. It is well known that great mental excitement will affect the secretions of the body, poison the milk, and perhaps throw the child into convulsions. Severe muscular exertion, as over the washtub, will also interfere with the digestive process, affect the mother's milk, and the little one will suffer.

It will be seen therefore, that the habits of the nursing mother, particularly in regard to diet, will have much to do with her infant's power to digest its food. With bottle-fed babies, the quality of the milk or other nourishment that they take, is an important factor; and the more delicate the child, the easier it will be to upset its stomach.

The *treatment* for constipation, is of two kinds; that which will give immediate relief, and that which will prevent its recurrence. Usually, the first thing to do is to inject into the bowels a quantity of tepid or warm water, this to be retained as long as possible; making firm pressure upon the anus with the hand, will prevent its escaping. The warm water softens the fecal matter, and a portion of it will be removed. The injection (see page 420) can be repeated if necessary; and where there is much difficulty in retaining it, have the water a little cooler. Applying a warm wet compress over the stomach and bowels, will also have a good effect; this should be worn at intervals, and removed (or renewed) before it gets dry. A good plan is to rub or knead the bowels with the hand, say once or twice each day, which will stimulate peristaltic action in the intestinal tract. The older the infant, the more thoroughly the kneading can be done; though all babies are fond of the hand rubbing.

To do away with the constipated condition, we must

remove the causes that have produced it. Strict attention to the character of the diet, is of the utmost importance. The milk or other food taken should be of good quality; then feed at regular intervals, and not too much at one time. Many babies are made sick by constantly overloading the stomach; they are either fed too often, or they take more nutriment than the system can appropriate. Where the infant is bottle-fed, the mother should look well to the management of its diet; not leave it to the nurse. Both before and after feeding, undue excitement of every kind should be avoided; if the child sleeps after it nurses, all the better. As a rule, too much attention is paid to our babies, in a way that excites them mentally and physically; and they become nervous and wakeful. A young infant should be let alone a good part of the time; if it slept more, its food would be better digested and assimilated. Often the same thing is true of the mother.

An abundance of fresh air night and day, and at all seasons of the year, will do much to promote good digestion. The child too should be taken out into the open air and sunshine, whenever the weather will permit.—But about the worst thing possible for the baby when it is ailing, is to call a doctor and go to dosing it. The next thing will be a disordered stomach, a congested liver, and the baby's ailments will multiply. Many mothers keep their rooms too warm, and this is bad for themselves and their infants. The child may be made a sort of hot-house plant, and exceedingly sensitive to every little change. Mothers who live in an atmosphere that is hot and impure, make themselves sick; and if they eat badly, indulge in hot drinks, and otherwise violate the laws of health, they will not only suffer from neuralgia and other ailments, but the

children they nurse will be imperfectly developed. Where the mother eats food that is highly seasoned, her nursing babe will suffer in consequence; the milk is saturated with salt, pepper, and other seasonings, and often the little one is tortured with thirst. The excessive use of sweets will also beget thirst, and produce constipation in the child. If the mothers who eat in this way would allay the infant's thirst by giving it water to drink, the case would not be so bad. But how many of them think of this?

### *Chafing.*

Babies that are very fat, scrofulous, or badly fed, are often troubled with chafing or excoriation. The surface may become raw, more or less inflamed, and painful. Lack of cleanliness is a frequent cause.

The *treatment* consists in keeping the parts scrupulously clean and dry; this in fact will usually prevent the chafing. In giving the infant its bath be careful to remove every particle of moisture, wherever there are creases or folds in the skin, as about the nates or groin. Also in changing the diapers cleanse every part thoroughly, using castile soapsuds if necessary. Keep a clean "powder bag" containing a little starch, talcum powder, or browned flour, and after the parts are well dried, dust them over with it; this may be done after each washing. If the child has been neglected and there is considerable excoriation, you may lay upon the affected part for an hour or two some folds of soft linen cloth wet in a lotion of boric acid, using half a drachm to a pint of soft water. Where the skin is much irritated, oiling the abraded surface will protect it from the atmosphere, and promote healing. A little olive oil is as good as anything; or if this is not at hand, use sweet cream.



Babies well cared for and properly fed, will neither be over fat, nor much troubled with chafing.

### *Heat-Rash.*

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What is termed heat-rash or "prickly heat," is an eruption that is accompanied by severe prickling and itching. It occurs in hot weather, and in children that are not properly fed; they eat too much, or the food is not of good quality. In either case, the system is surfeited with material that it cannot utilize, and this is being thrown out through the skin. An infant that is overclad or kept too warm, will sometimes be covered with minute red pimples, these itching and smarting till the child is in torment. Often the eruption is more profuse about the neck and chest. It may disappear within a few hours, or continue and become a real eczema.

In the way of *treatment*, first remove the superfluous clothing. Then sponge the child from head to foot with tepid water; or bathe it with soda water, using a teaspoonful to a pint. After the bath, dry gently by patting the skin with a soft fluffy towel, and without rubbing. This is done for immediate relief. To effect a cure, feed correctly; see that the milk or other nutriment is of good quality, and do not give too much of it. Care in the diet and a sufficient amount of bathing, is about all the treatment required; though if the skin is very sensitive, avoid rough flannels or anything that will produce irritation.

### *Scalped-Head, Etc.*

There are various *eruptions* common to infancy, as scalped-head, tooth-rash, red gum, etc., these being different forms of the same disease. The eruption at first

consists of minute hard pimples, clustered or scattered, which usually appear on the face and neck. In some cases the affected surface is moist; in others, slight desquamation takes place. If the part is scratched the pimples may run together, forming scabs. Where moisture exudes, the disorder is called running tetter. In scalled-head or milk-crust, the scalp is the part affected. What is spoken of as tooth-rash, occurs when the child is teething.

The disease may develop on almost any part of the body; it has a variety of names, and is not considered of much consequence. It is frequently seen in the form of raw red patches, situated within the bend of the elbows or knees, or behind the ears. In chronic cases the skin is thickened, and covered with dry hard scales. The eruption is almost always accompanied by severe itching.

The *cause* of the disease, is a bad condition of the blood. The child breathes impure air, eats too much, or the food is not of good quality; sometimes all of these causes are combined. The *exciting* cause may be anything that irritates the skin, as rough garments, uncleanliness, etc. Exposure to extremes of heat and cold, will sometimes bring out the eruption.

The *treatment* is of two kinds; that given to relieve the irritation, and that which will improve the quality of the blood. All exciting causes should be promptly removed. To relieve the itching, bathe the parts in soda water, a teaspoonful to the pint. Starch powder or bran tea, is also soothing to the skin. An excellent lotion in these cases is two drachms of bicarbonate of soda, one ounce of glycerine, and seven ounces of bran tea, or slippery-elm water. Where the head is the part affected, it may be necessary to cut the hair close to the

scalp. If thick scabs are formed, soften with olive oil or vaseline; apply at night, covering with a thin cloth, this being held in place by a cap or bandage. In the morning remove the scabs; though if they are not sufficiently softened, you may have to repeat the oiling.

The way to *cure* the patient, is to purify the blood. The food especially should be of the right quality, and not too much of it taken. If the child nurses, diet the mother strictly; she should live chiefly on plain bread and fruits, these being served without sugar. If mushes are used have them well cooked, and eaten with a limited amount of dry toast.

#### *Hives.*

Nettle-rash or hives, is an eruption characterized by a white raised spot in the center of a red patch. The affection may occur at any age. The first symptom is severe itching of the skin, after which the rash suddenly makes its appearance. The spots may be few or numerous, large or small, band-like, round, or irregular in outline. They may be the size of a pea, or many times larger. The eruption is attended with severe itching, burning and tingling, these being worse at night. Hives usually result from indigestion; though the bites of bugs, flies, etc., are given as causes. In some persons, the eating of certain fruits, as strawberries, raspberries, pineapples, etc., will produce the eruption; there is of course impurity in the blood, or the spots would not appear. The disease sometimes occurs in the chronic form, and is very troublesome; it is generally due to dyspepsia, or disorder of the liver.

The *treatment* immediately called for, will depend upon the symptoms that are present. If the patient is suffering from indigestion give a warm-water emetic,

and remove the contents of the stomach. Follow with *hot-water* drinking, which will help to cleanse the alimentary tract. Then wring a cloth out of very hot water, and lay it over the spots to relieve the itching. Or you may apply a lotion made by dissolving a teaspoonful of soda in a tumbler of water. Vinegar is also employed for this purpose; and some use equal parts of alcohol and water. Where the pain is caused by the bites of insects, or nettle stings, relieve it in the same way. Some apply a mixture of chloroform and glycerine, taking one part of the former to four of the latter. All sources of external irritation should of course be removed.

To prevent a return of the attack, be exceedingly careful in regard to the diet; and if the patient is old enough, have him drink an abundance of pure soft water at frequent intervals. The warm wet-sheet pack (see page 407), timely administered, will hasten a cure; so will the full warm bath.

## CHAPTER XX

### DISEASES OF CHILDREN

The death-rate among children, even in communities that are highly civilized and enlightened, is excessive. It has been said that one-half the human race die under the age of five years. Why is this? Either there is great disregard of the laws of health, or they are not properly understood. If the environment is at fault, some one is to blame for it; not the health boards alone, but the people who fail to demand better conditions. *Thorough hygiene and sanitation*, not merely in the large cities but in every town and hamlet, is the crying need of the hour. Strict cleanliness everywhere, would save hundreds and thousands from the ravages of disease. Pure air, pure water and pure food, would practically do away with epidemics; and if by chance these were brought into our midst, they would rapidly disappear.

With perfect physical conditions, an individual is but slightly susceptible to morbid influences; examples of this may be seen in almost any community. A child that is strong and well, if exposed to an eruptive or other contagious disease, either escapes entirely or has but a slight attack. When the blood is pure *vital resistance* is at its best, and protects against disease. The fact here stated, is well known among hygienists; and mothers have often told me that their babies had never

been ill a single day, even when teething. Not only so, parents who inherited feeble constitutions, but have carefully studied the laws of life and health, will often raise a family of children and seldom or never call a doctor. An excellent thing to do in every home, is to take a *first-class health journal*; a little expense of one or two dollars a year, is nothing compared to an illness in the household. It is a promising sign of the times, that we have more health journals than formerly, and better ones. The needs of the body are beginning to receive the attention which they deserve.

Years ago, most of our physical ills were laid at the door of Providence. But in this, the twentieth century, we are looking for the *causes* of our ailments. If we get sick, we know that somebody has transgressed. Where every organ is performing its function normally, the skin, kidneys and other depurators doing their full duty, even a foul contagion, as smallpox, will scarcely find lodgment in the system; if it is introduced into the blood, the poison will be eliminated so promptly that it does very little harm. Measles, scarlet fever, and other eruptive diseases, are often so light in form that the patient hardly goes to bed; and in a short time he is entirely well. But if the blood is filled with impurities, from breathing bad air, eating improper foods, and drinking foul water, the attack may be so severe as to endanger the patient's life.

When thorough sanitation is the rule, not merely in our great cities but in towns and country places, there will be few if any epidemics. The eruptive diseases from which so many suffer, are the products of filth. Scarlet fever is believed by many to result, very largely at least, from that form of filth which exists in vaults and privies; the impurity finds its way into the atmos-

phere, and epidemics are produced. In typhoid fever, the specific poison is generally in the water that is used for drinking and cooking. There are various sources of this particular virus. Diphtheria, smallpox, and in fact all contagious diseases, are due to lack of cleanliness in some locality, the germs being carried to other places. What is termed grip or influenza, is largely imported from the Old World; it originates in Asiatic or European countries, and may be carried to any port in christendom. The way to eradicate these diseases, one and all, is to *clean up*; institute sanitary measures, and see that they are enforced. Yellow fever can only be run out in that way; and the same is true of all the contagions.

In the *treatment* of eruptive fevers, it is a rule of very general application to move the bowels freely in the start, stop feeding (except fluids), and then not disturb the intestinal tract very much afterward. Many a child has been killed, by giving an active purgative at the time when the system was making every effort to throw the foul matters to the surface. No hygienist will ever make a mistake like this; he will understand what nature is trying to do, and endeavor to assist her in her efforts. A single dose of medicine (as calomel or other antiphlogistic drug) may so change the direction of the remedial action that the virus, instead of being eliminated by cutaneous depuration, will be retained in the system, and the drug poison along with it. Hundreds and thousands of children suffering from scarlatina, have been sacrificed by the use of drugs. It is only in later years, and through the teachings of the hygienists, that treatment very different and less heroic, has been adopted. Every little while the papers report a death from measles. *Measles!*

Why should a child die with that disease? It would not, if properly treated. Moreover, the number of deaths from smallpox, scarlet fever and diphtheria would be many times reduced, if rational methods were employed.

Briefly stated, the indication in eruptive diseases, is to so *direct* remedial effort that the specific poison will be thrown out largely through the skin. The blood is determined to the surface of the body; not directed to internal organs, to congest and destroy them. The skin, as we know, is the largest depurator we have; and it is only when remedial action is directed *away from it*, that disorganization results. The philosophy of curing, whether in eruptive or other diseases, is to endeavor to *balance* vital action in every organ and tissue. If a local part is too hot, cool it; if the extremities are cold, warm them. If there is severe congestion in the throat, in the head or other nerve center, *derivative* treatment is indicated; we must either draw the blood away from congested tissues, or force it away; and as far as possible, the circulation must be kept in good balance. We do this, not by administering drug poisons, which are antagonistic to the vital instincts, but by the judicious use of nature's *materia medica*. Treatment that is too heroic must be carefully avoided; there is such a thing as overpowering the vital instincts, and rendering helpless the *vis medicatrix naturae*. It is of the utmost importance to know when to do nothing; when to let well enough alone. Unfortunately, those who only half understand this great system of treating by hygiene, are often inclined to rash methods in the use of the healing agents. It is better to err on the safe side, especially if the patient is very sick.

Another rule which applies in nearly all cases, is to



*stop feeding* when there is an abnormal rise of temperature; give but little except fluids, and these of the simplest character. Let the patient have all the pure soft water he will drink. Acidulated beverages, as fruit juices, are also excellent. The free use of fluids, will help to purify the system; the poison in the blood will be diluted, and the skin and other depurators stimulated to throw out impurities. The warm wet-sheet pack (see page 406), where it is indicated, will aid greatly in the elimination of foul matters through the skin.

In diseases of children, it is a very simple matter as a rule to treat successfully, particularly if the case is taken in the start; we deal with the symptoms as they arise, and change the treatment as the conditions vary. Almost any judicious mother, if left to herself, would do the right thing, and at the right time.

When a child has been exposed to some contagious disease it should be dieted strictly, bathed at frequent intervals, and allowed plenty of fresh air to keep the blood pure. Then if the eruption appears on the skin (which is nature's way of throwing out the poison), the timely application of such treatment as will promote cutaneous depuration, will help to cut short the attack. So well are these matters understood by mothers who are skilled in hygiene, that there is little feeling of anxiety so far as the termination of the disease is concerned. I remember hearing a mother make this remark: "If a child has even a fairly good constitution and is well cared for, it will be next to impossible to kill it, provided no drugs are administered." This mother never gave her children a particle of medicine; she knew better than to do so. The father of her little ones was anything but robust; he

belonged to a family in which there had been many deaths from pulmonary tuberculosis. But these parents were interested in health and hygiene, and brought up their children in such a way that they were strong and well.

The popular way of treating the sick, is to give drug poisons; and for thousands of years nature's way of curing was neither taught nor practiced. How is it to-day? More rational methods have been introduced, and a large per cent. of our people have adopted them. But the great masses either know very little about the hygienic system, or they are indifferent to it. When in good health they think they are doing well enough; and when ill they send for a doctor, who gives them drug medicines. In other words, they are poisoned because they are sick. It is for the benefit of such people, that these pages are written. The author, after many years' experience in the hygienic practice, is thoroughly convinced that there is a better way of treating the sick than by dosing. Make the depurating and other organs do their legitimate work, and the patient if curable will be speedily restored to health. The directions for treatment here given will not only cure promptly, but put the system in a better condition to resist morbid influences.

#### *Anæmia.*

What is termed anæmia in the medical books, might almost be called *bloodlessness*. The child is not properly nourished; usually the blood is deficient, either in quantity or quality, or in both. Often too he has been well dosed for some previous ailment, and the blood-making power of the system is in a measure lost. To have good blood and plenty of it, several things are

necessary; chief among them are pure water, the right kind of food, fresh air and sunshine, and enough exercise to make strong muscles. Moreover, the individual must *let drug medicines alone*. A child that is continually dosed for every little ailment, will very soon become anæmic; his cheeks grow pale, his muscles thin, and he feels languid and weak. Often too the appetite fails, the strength gives out, and the patient is sick all over, and all through.

The *causes* of the disease have already been indicated, most of them at least; bad air, bad water, bad food (or not enough of it), frequent dosing, lack of sunshine, and unsanitary conditions generally. Anything that interferes with the digestive process will tend to produce dyspepsia, and predispose to anæmia. The presence of worms in the intestinal tract, is given as a cause; but these parasites are themselves the result of improper feeding, indigestion, constipation, and other disorders of the stomach and bowels.

The *symptoms* are just what we should expect from the causes that lead to the disease. The skin is pale and bloodless; the eyes are hollow, and the cheeks sunken; the muscles are small and weak; the pulse is feeble; the hands and feet are cold; the appetite is impaired; and the patient is incapable of much exertion.

The *treatment* ought to suggest itself when we know the causes. First, give the child plenty of fresh air and sunshine, and as much exercise as it can take with comfort. Good ventilation night and day, is of the utmost importance. Then see to it that the food is of the right kind, and given at regular intervals; the more thoroughly it is masticated, the better will be the digestion. Raw ripe fruits, especially apples, are excellent.

in these cases; fruits, cereals, and a limited amount of fresh nuts, should be the staples in the dietary. If the teeth are not fully developed, good pure milk may be served with the cereals, having the latter very thoroughly cooked. Little or no sugar should be used, or seasonings of any kind. The diet suited to a child just weaned, is about what these patients require.

Keep the skin clean by sufficient bathing, and follow with hand frictions over the surface of the body, leaving the extremities dry and warm. Drinking an abundance of pure, soft water, will facilitate recovery. Encourage the patient to sleep as much as he can; regularity in all his habits will be an advantage. Exercise should be taken in moderation; never to the point of exhaustion. Children that are anæmic, should live out of doors as much as possible; and the rooms in which they sleep should be large and airy, and on the sunny side of the house. About the worst thing that can be done, is to give these patients drug medicines. Keep the intestinal tract free at all times; if the bowels are constipated, use enemas of tepid or warm water (see page 420) as needed. Where the diet is strictly correct, the bowels will generally move of their own accord.

#### *Acute Tonsillitis.*

In the disease here named, there is an acute inflammation of the throat, involving the tonsils, and also the pharynx and soft palate; *quinsy* is another name for it. Sometimes the ear is more or less involved, owing to extension of the inflammation through the Eustachian tube. This affection may have its origin in catarrh of the mucous membrane of the throat. Patients who are scrofulous, are apt to suffer from tonsillitis. Unphy-

biological habits in eating, drinking, etc., will predispose to the disease. The principal exciting causes are bad air, and exposure to extremes of heat and cold.

The *symptoms* are chill, fever, headache, and pain or difficulty in swallowing. The tongue is heavily coated. The tonsils and soft palate are red and swollen. Sometimes the chilliness and febrile action precede the swelling of the tonsils by several hours. The morbid process if not arrested in its early stages, may go on to suppuration; and if lancing is not timely resorted to, the pus may be discharged into the mouth while the patient is asleep, or during a fit of coughing.

The *treatment* indicated is to reduce the local inflammation, keep down the fever, and open the abscess if pus forms. One of the first things to do, is to have the patient inhale hot steam, which will soften and relax the parts. An inhaler may be improvised by connecting a rubber tube with the spout of a tea-kettle or coffee pot, and conducting the steam into the mouth and throat. Simply holding the mouth over a vessel filled with boiling water, and inhaling the vapor that rises by blowing into it, will have a very good effect. If the throat is dry and irritated, you may use a gargle of slippery-elm water, thin mucilage, or flaxseed tea. In the first stage of the disease, give small bits of ice to hold in the mouth until they melt; in doing this, the child should throw the head back, so that the ice will come in contact with the soft palate. You may also wrap pounded ice in a towel, and apply it to the throat externally, covering with flannel to keep in the moisture. A still more satisfactory treatment where there is a nurse to give it, is to make alternate applications of hot and cold to the throat, allowing each to remain on but a short time.

To reduce the fever, apply a large wet compress around the trunk; have it the temperature that is most agreeable, and change at frequent intervals. Sponging the body every little while with tepid water, will keep down the surface heat. If suppuration takes place in spite of every effort to abort it, then encourage the formation of an abscess by the inhalation of steam, and hot fomentations (see page 413) applied to the throat. Usually, however, when the case is taken in time, the suppurative process may be prevented. If the swelling about the throat becomes soft, showing that matter is present, much time may be saved by lancing the tonsil and letting out the pus. Derivative treatment as the hot sitz and foot baths (see pages 384 and 386), will draw the blood away from the affected tissues, and facilitate a cure.

As a general thing recovery is rapid, and the tonsil returns to its natural size; though very much will depend upon the habits of the individual. If very hearty foods are eaten, and the system is allowed to drift into abnormal conditions, the tonsil will sometimes remain enlarged. One attack of this disease, usually predisposes to another; the slightest exposure to cold may bring on a second seizure. The bowels should be kept free by means of full injections of tepid or warm water (see page 420); and throwing up small enemas of *cold* water from time to time, will help to allay the fever.

Give little if any nourishment until the patient begins to convalesce; then feed lightly until recovery is complete. So long as the temperature remains above normal, a fresh orange, or a glass of fruit juice diluted to suit the taste, is about all that is necessary. Thorough ventilation night and day, is of the utmost importance.

*Enlarged Tonsils.*

An acute attack of tonsillitis is now and then followed by a chronic hypertrophy of the tonsils. The enlargement is sometimes confined to one side, but often both tonsils are affected. Where there is much enlargement, the throat may be almost entirely obstructed, the two organs coming in contact. Not unfrequently the inflammation extends through the Eustachian tube, and the middle ear is more or less involved. Often the enlargement is produced gradually, particularly in scrofulous children.

Aside from inherited tendencies, the disease in its chronic form is very commonly brought on by erroneous habits in eating and drinking. Breathing bad air, and living or sleeping in rooms that are hot and stuffy, will predispose to the disease. Inattention to bathing, and keeping the child housed up too closely, will have a similar tendency. A sluggish circulation, and a torpid condition of the bowels, are frequent etiological factors. The leading *symptoms* are difficulty in swallowing, constant irritation in the throat, and enlargement of one or both tonsils. Often the voice is affected; it becomes nasal in character, on account of the partial paralysis of the soft palate. The child too has a tendency to sleep with its mouth open; and if there is much enlargement, combined with a catarrhal condition of the throat and nose, mouth breathing may become habitual. Not only so, the obstruction in the respiratory organs, making the breathing imperfect and superficial, will in time arrest the development of the chest and lungs. In some cases, the effort to breathe is so great that the individual may be waked out of a sound sleep in a sort of nightmare.

The *treatment* when commenced early, is relatively simple; that described for acute tonsillitis will generally reduce the inflammation, and the tonsils will gradually return to their normal size. Inhalations of hot vapor, and the persistent application of hot and cold to the throat externally, will soften the parts and afford relief. Combined with the local treatment, give that which is derivative; hot sitz and foot baths (see pages 384 and 386), or hot compresses applied to the legs and feet, say at night on going to bed, will tend to equalize the circulation by drawing the blood away from the congested tissues.

It must be said, however, that the local treatments though necessary, are palliative rather than curative. To restore the patient to health, the habits of the individual must be correct. The food should be such as is suited to the needs of the system, and no more of it eaten than the tissues can appropriate. Keep the intestinal tract free; if the bowels are constipated, give injections of tepid or warm water (see page 420) as required; though if the diet is what it should be, the bowels will probably move of their own accord. The habitual use of raw ripe fruits, with a moderate amount of cereals that are well cooked, will have a very wholesome effect. Seasonings and condiments, and stimulants of every kind, should be let alone; these not only tend to constipate the bowels, but they produce an inflammatory condition of the blood, and feed local congestions. As in every other disease, the important things in nature's *materia medica* are pure air, pure water, and a correct dietary. The skin of course should be kept active by a sufficient amount of bathing, to encourage cutaneous depuration. The child should exercise daily in the open air and sunshine, which will



strengthen the muscles and build up the health generally. Regular hours of rest and sleep, are also exceedingly important. The clothing worn should be loose, and porous in texture.

Often the patient is not seen until the disease has made much progress; and perhaps the environment is such that the needed treatment cannot be obtained. The condition of the child becomes worse and worse, and there is nothing left but to send for a surgeon, and cut out the tonsils. This, properly done, will at least remove the obstruction in the throat, and permit the child to breathe better; and if such *other* treatment could be administered as would stimulate the depurators to normal activity, the patient might be restored to a good degree of health.

#### *Adenoid Growths.*

The growths here referred to, also termed adenoid hypertrophy, are very frequently seen, both in children and adults. They develop in the naso-pharyngeal passage, and are of several varieties and shapes, the nature of each being essentially the same; they are often called adenoid vegetations. There is the *stalactite* form, in which numerous pear-shaped bodies are pendant from the vault of the pharynx. In the *fimbriated* variety, the growth is composed of several masses resembling cockscomb, these being closely packed together. There is also the *individuate* variety, in which the mass is made up for the most part of a single neoplasm; it has a firmer consistency, smoother surface, and a more or less irregular contour, according to size and degree of impaction. In the two first named the adenoid element predominates, rendering them soft and friable to the touch. The *individuate* variety often contains much

fibrous tissue, which gives it greater density and tenacity. Between these three forms, all degrees of variation, both in contour and texture, are met with.

The *causes* of adenoid growths, are not very well defined in medical books. No doubt as a rule they are developed by unphysiological habits, in eating, drinking, etc. Children of syphilitic and tuberculous parents, are predisposed to the disease; but others that are relatively robust, are also affected. Climatic changes are thought to be exciting causes.—The *symptoms* will vary somewhat with the size and character of the growth. The excrescences when large, are forcibly compressed between the lateral walls of the nasopharynx; or they overlap and obstruct the opening of the Eustachian tube from above. In either case, they act as a stopper to one or both openings. Where there is less hypertrophy, the catarrhal condition accompanying it is prone to extend along the Eustachian tube, and cause exudation or suppurative inflammation of the middle ear. Deafness often follows, and may become permanent, unless relief can be afforded. Not only so, adenoid hypertrophy serves as a plug to the posterior nasal passages, and obstructs nasal respiration more or less completely, according to the degree of enlargement.

Dr. Casselberry speaks of a number of *deformities* to which these growths give rise. The plugging up of the posterior nares necessitates oral breathing, and the constantly open mouth interferes with the normal development of certain facial muscles. Persons so affected have a vacant, not to say stupid expression of countenance. The lower jaw hangs, and the face appears elongated; the nose is pinched, and the angles of the mouth and eyes have a drawn appearance. Moreover, the air-cavities in communication with the nose cease to develop,

and thoracic deformities result. The individual becomes pigeon-breasted, or the chest is barrel-shaped, through lack of normal expansion. A third deformity mentioned is the flat chest, this resulting from an insufficient supply of air to the lungs. The author just quoted, believes that adenoid hypertrophy is a prominent etiological factor in the production of chronic bronchitis.

The *treatment* to be effective, should be commenced early; before the growths have attained much size. We might easily prevent the development of these neoplasms, by putting the system in a good condition before they make their appearance, or at least while they are quite small. About the same treatment would be necessary, in diet, bathing, &c., as that which has been described for enlarged tonsils. But after the growths have become so large as to seriously obstruct the nasopharyngeal passage, it would be very hard to reduce them. The breathing itself becomes so imperfect that not a sufficient supply of air is introduced into the lungs; and without plenty of fresh air, pure blood cannot be made. The whole system is more or less affected, and the growths continue to develop.

The treatment usually resorted to, is the prompt removal of the neoplasm. When the adenoids are small and soft; they are sometimes removed by thorough scraping with the finger-nail, this being cleansed, and used as a curette; in these cases there is no need of an anæsthetic. As a general thing however the child is anæsthetized by ether, and the growth removed with an instrument. Several methods are recommended; the cautery, snare, curette, and forceps; three or four pairs of forceps may be needed, where the adenoids are numerous. After twisting off the growths, the remaining shreds may be scraped away with the finger-nail. The surgeon must

thoroughly understand his business, and see that the hemorrhage which follows the operation is allowed to escape by the nose and mouth. The patient is kept in bed for a day or two; and while the parts are healing, they are cleansed by syringing through the nose with an antiseptic solution.

For a further account of the operation, the reader is referred to works on surgery.

#### *Foreign Bodies in the Air Passages.*

Some children seem to take pleasure in filling one or both nostrils, with beans, peas, or anything that they can introduce into these passages. About the simplest thing to do in such a case, is to have the child blow his nose forcibly, when the foreign body may be expelled. If one nostril is clear, a good plan is to close the mouth, make pressure upon the unobstructed nostril, and have the child blow through his nose as hard as he can.

Another way is to close the empty nostril with the finger, and then blow suddenly and strongly into the mouth; the glottis closes spasmodically, and the offending substance may fly out at the first effort. Now and then it can be gotten rid of by making the child sneeze; a little whiff of something pungent, as snuff or ammonia, may produce the sneezing. If the bean or other substance is not too far up in the nostril, it can often be removed by a loop of wire or a blunt hook. A hair-pin serves the purpose very well; either use the loop end, or bend the wire in the form of a hook before introducing it. Where the substance is not tightly imbedded, or if it is soluble, it may be washed out by means of a syringe; throw the water up the unobstructed nostril, and let it pass out of the other containing the foreign body. Or, you may use the post-nasal douche; (see page

426). Sometimes the body is swallowed, passes down the œsophagus and into the stomach, and gives no further trouble. [www.libtool.com.cn](http://www.libtool.com.cn)

If by the simple means above suggested the foreign substance cannot be expelled, either because it is high up and tightly impacted, or has passed out of reach, some other method may have to be employed. Where it gives rise to urgent symptoms, advice should be promptly sought; call a physician or surgeon, and let him manage the case. The amount of obstruction produced by a foreign substance in any part of the respiratory tract, will of course depend upon its size, shape, weight, &c.

Aside from the nose, the most common location of a foreign body is in the trachea; though it may be lodged in the larynx, or in one of the bronchial tubes. Usually the first symptom produced by the entrance of a foreign body into the larynx or lower air passages, is violent coughing; and if there is much obstruction there may be difficulty in breathing, with a sense of suffocation. Where the substance is of organic nature, as a bean, pea, or a grain of corn, it may swell to double its size, and give rise to still greater obstruction. Sometimes the foreign body is not in the air passages, but in the pharynx or œsophagus; in which case a digital examination of the pharynx can be made; or you may explore the œsophagus with a bougie designed for that purpose.

If however the case is one requiring surgical treatment, the proper thing to do is to have the patient lie down with the hips elevated, and seek advice without delay.

#### *Mumps.*

In this disease, there is more or less inflammation of the parotid gland. It usually prevails in childhood, and

runs a very mild course. The patient has a slight chill, then a little fever for two or three days, and the parotid gland begins to swell; sometimes both glands are involved. Not unfrequently, pain on moving the jaws is the first symptom. Where the swelling is considerable it extends to the throat, and the breathing may be somewhat obstructed. As a general thing, not much pain is felt except in eating or talking. In a few days the feverishness disappears, and very soon the patient is well. There are instances however, in which the swelling is painful and severe; and unless the case is promptly treated, suppuration may take place. The pus so formed usually discharges through an opening in the cheek, or through the external canal of the ear. Where the patient takes cold, the swelling may subside in the parotid gland, and make its appearance elsewhere; this is termed *metastasis*. In males, the testicle and scrotum are the parts so affected. In females, the breasts or ovaries may be more or less inflamed.

The disease is infectious; the period of incubation is usually two or three weeks, though it may be longer or shorter. The condition of the system at the time of exposure, has very much to do with the severity of the symptoms. Where the blood is relatively pure, the attack is often so light that the patient scarcely goes to bed; if however he should take a severe cold, it would complicate the disease.

The principal *treatment* required, is to diet the patient carefully, apply wet compresses to the affected gland, and keep the skin active by sufficient bathing. The patient should eat but little until the febrile symptoms abate. Subacid drinks, as fruit juices, may be taken freely; have them cool or cold, diluted to suit

the taste, and only slightly sweetened. Oatmeal or other gruels, strained and well cooked, or a little fruit, is about all that the patient will need until he begins to convalesce; or a bit of graham toast may be softened, and eaten with cooked fruit. While the fever continues, sponge the body once or twice a day with tepid or warm water; or the full bath may be taken, the patient remaining in it only a few minutes. After the bath dry well, and rub with the hand until the skin is in a glow; see that the feet are left dry and warm. Then put the child immediately to bed, and place a bottle of hot water at the feet. Admit plenty of fresh air into the room, but see that the patient does not lie in a draft. About the easiest way to take cold, is to live or sleep in a room that is hot and stuffy. To prevent colds we should live in a pure atmosphere, wear just enough clothing for comfort, and avoid *extremes* of temperature. The skin of course should be made active by keeping it clean.

To reduce the local inflammation, apply wet compresses to the affected part; these should be the temperature that is most agreeable to the patient. Where there is much heat in the gland, cool or cold will be liked best. If the cold becomes disagreeable remove the compress, apply hot fomentations (see page 413) for ten or fifteen minutes, and then put on a compress that is neither very hot nor very cold; the rule in these cases, is to apply nothing that will shock. Should the inflammation be severe and the parts suppurate, give hot fomentations to hasten the process. When softening occurs, showing that an abscess has formed, you may let out the matter with a lancet. Then apply a wet compress, having it warm enough to be comfortable; change this at frequent intervals, and keep the parts clean until heal-

ing takes place. The bowels should be kept free from the start; if they do not move of their own accord, give injections of tepid or warm water (see page 420) as needed. [www.libtool.com.cn](http://www.libtool.com.cn)

Where metastasis has taken place and other glands become swollen, treat the affected part the same as in the original disease. If there is inflammation in the testicles or the ovaries, the frequent use of the sitz bath (see page 384) will be of service, having the water the temperature that is most soothing to the patient. If there is much fever, either sponge the body frequently or give the full warm bath, lowering the temperature of the water several degrees before the patient comes out of it. In some cases, you may give the wet-sheet pack (see page 406); though this should not be employed unless the surface reaction is good, the heat evenly diffused, and the extremities are warm.

### *Whooping-Cough.*

The character of this affection is partly indicated by its name; after it is well developed there are severe and paroxysmal attacks of coughing, attended with a whoop. The disease, which is infectious, is seldom met with except in childhood; and it rarely occurs more than once in the same individual. Its duration varies from three or four weeks, to as many months. The period of incubation is from three or four days to two weeks. At first, the affection is apt to be mistaken for an ordinary cold; very soon however the characteristic whoop removes all doubt as to the nature of the disease. The coughing is often preceded by a sensation of tickling in the throat. A paroxysm may be provoked by the inhalation of cold air; also by laughing, crying, swallowing, and in various other ways. The principal cause of the



coughing, is the accumulation of a tough, tenacious mucus in the throat.

In some instances, the disease gives rise to rather serious complications. The violent coughing may produce hernia or rupture. More frequently there is a collapse of some portion of the lungs, or a dilatation of the air-cells, and permanent shortness of breath is the result. The best time to have whooping-cough is in the spring; the patient usually gets well over it during the warm months, without any troublesome after effects. If the disease is contracted in the fall the cough is inclined to linger, perhaps all winter; and now and then it leads to consumption. Where the patient is rather feeble, or there is any weakness in the lung tissue, an irritability of the mucous membrane is often left, and gives rise to a cough whenever a little cold is taken. As a rule, the disease is not fatal.

Only a moderate amount of *treatment* is needed, except to protect the child from taking cold; it should not be housed up too closely. Admit plenty of fresh air and sunshine into the rooms (this cannot be too strongly emphasized), and take the child out of doors when the weather will permit. Feed correctly, and rather abstemiously. When a coughing paroxysm is severe, give warm or hot water to drink; if it produces vomiting, all the better, as this will help to clear the throat of mucus. Make the skin active by sponging it every day, or every other day; after drying well, follow with brisk hand rubbing from head to foot, and be sure the extremities are left dry and warm. Inhalations of hot vapor given from time to time, will be of service; and where the lungs seem considerably congested, apply hot fomentations (see page 413) over them; continue these ten to fifteen minutes, then dry with a towel, and

rub gently with the hand. Where the reaction is good, warm wet compresses may be worn over the chest; either put them on at night, or about midforenoon—not too near the mealtime.

The paroxysms of coughing, are to a certain extent involuntary; though often the attack can be in a measure prevented, by giving some simple form of treatment; this will divert the attention of the child, and tend to arrest the coughing. The more it is indulged in, beyond what is actually necessary, the greater the irritation will be in the mucus membrane. One of the best methods of arresting a troublesome cough, especially where there is much tickling and irritation in and about the larynx, is to have an assistant wring a thick cloth out of ice-cold water, and envelop the throat in it, cover with a thin oilcloth or a single strip of light flannel, and renew the application at frequent intervals. This will often check the irritation, and afford great relief. Where the child is old enough to use it, a gargle of hydrogen-peroxide has been highly recommended; or you may take hydrogen-peroxide and pure glycerine in equal parts, having them well diluted, and spray the throat every four hours. Either treatment cleanses the parts, allays irritation, and there is less coughing. Another plan, also good, is to spray the throat with a solution of boric acid; this too is cleansing, and will help to cut short the coughing paroxysm.

If the weather is cool, see that the child is comfortably clad; the garments should be light and porous, and not too many of them worn. Where the body is overclad the skin becomes debilitated, cutaneous depuration is arrested, and the lungs will have more work to do. The rule for bathing in these cases, is simply to keep the skin clean. Dry *frictions* with the hand, to deter-

mine action to the surface of the body, will not only relieve the respiratory tract, but keep the child from taking cold so easily. Have the diet exceedingly simple; it should consist largely of fruits and cereals, the latter very thoroughly cooked; both should be served without sugar. Let the patient have all the cold water he will drink; or if preferred he may take the juices of fruits, these being diluted to suit the taste, and only slightly sweetened.

### *Influenza.*

Another name for this affection, is la grippe. It is an acute, infectious disease, and often epidemic. One attack generally predisposes to another. The immediate or exciting *cause* of influenza is thought to be specific in character, its germs being transported from place to place. Epidemics of the disease usually begin in the East, and travel westward. A very remarkable one started in western Asia, May 1889, reached St. Petersburg in October, Berlin in November, London in December, and the eastern cities of the United States by the middle of that month. As in most other affections, anything that lowers vital resistance will make the individual more susceptible to the disease. A previous illness, an impaired state of the health, or a foul and impure condition of the blood, will predispose to influenza.

The leading *symptom* is a catarrhal inflammation of the respiratory tract, combined with more or less disturbance of the nervous system. In most cases, the attack begins with a chill or chilliness, and cold in the head with irritating discharges. The head aches, the eyes are red and tearful; there is tickling in the throat, hoarseness, and an irritating cough. The temperature

rises above the normal; often there is great weakness, and there may be difficulty in breathing. Pain in the back is a common symptom. The illness continues from three to ten days; though if much drugging is done the symptoms are intensified, and the course of the disease is prolonged.

The *treatment* is exceedingly simple. Put the child to bed, and give one or two full injections of tepid or warm water (see page 420), evacuating the bowels thoroughly. When he has rested a while, a hot foot bath (see page 386) is in order; it can be given in bed if necessary. Where the patient is strong enough, the hot sitz and foot baths may be combined. After this treatment, rest in bed is the main thing. Give little or no food till the fever subsides, unless it be an orange, or the juice of a subacid fruit. If the patient is very weak, and feels like eating, a cup of thin rice or oatmeal gruel well cooked, is as good as anything. As a rule however, the less he takes (except the juice of fruits) the better, until the temperature becomes normal.

Where there is much nervousness give gentle rubbing with the hand particularly down the spine, and to the lower extremities. The leading feature in the treatment, is to do nothing; admit plenty of fresh air, keep the child quiet, and let him sleep as much as possible. In a few days he will be well; and no drug poisons having been administered, the injury to the nervous system will be slight. Neither will the patient have a *relapse*; though this is very frequent in the drug medical practice.

#### *Vaccinia.*

This is a pustular eruptive disease, produced by vaccinating a human being with lymph obtained from the sores that form on a cow after she has been inoculated

with smallpox virus. Vaccinia is simply smallpox in a modified form. It is communicable only when introduced into the blood.

If the vaccination "takes," a *papule* makes its appearance on the third day, at the point where the virus was inserted. By the sixth day a *vesicle* has formed, with a central depression. On the eighth day the vesicle has become a *pustule*, and is distended with lymph; it has a reddish areola, which becomes half an inch to an inch wide. On the tenth day the pustule begins to dry up, and the areola fades; and by the fourteenth day a brown scab or crust has formed, which is detached about the twenty-third day. The cicatrix left is depressed, radiated, and after a time becomes paler than the surrounding skin. During the course of a vaccination, more or less constitutional disturbance occurs, especially in children. Eczematous and papular eruptions often develop afterward, particularly in those who are scrofulous.

The object of the present article is to warn mothers against allowing their children to be poisoned, by having them vaccinated. It is bad enough to have our little ones exposed to the contagious diseases which are still met with, even in communities that pay more or less attention to sanitary conditions. To expose a child needlessly to measles, scarlatina or other eruptive disease, is held by many to be next thing to criminal. So careful indeed are most physicians in this respect, that *strict quarantine* is maintained where such diseases are known to exist; and the people in the neighborhood are warned not to go near a house so infected. But what shall we say of a parent who authorizes a physician or anyone else, to deliberately rupture the bloodvessels of her child, and introduce a virulent poison? If it dies

in a few weeks or months, or lives to be a permanent invalid, the mother has herself to blame.

The argument usually advanced in favor of this barbarous practice, is that it renders the individual *immune* to smallpox—a statement thoroughly disbelieved by many intelligent men and women on both sides of the Atlantic. Statistics have been carefully selected and preserved, which prove beyond the shadow of a doubt, that vaccination does *not* prevent. The fact is established, that thousands of people who have been vaccinated, many of them repeatedly, have not only fallen a prey to smallpox, but had the disease in its worst form. The only way to run out smallpox, or any other contagious disease, is to *enact sanitary regulations and enforce them.*

Every one of the eruptive diseases, as smallpox, scarlet fever, measles, etc., is the product of filth. Many of them originate among the people in Asia and other countries, where the environment is *indescribably filthy.* These diseases are brought to our shores by immigrants, and are carried from place to place. Usually they first make their appearance in some seaport, and are thence conveyed to distant parts; and that town or city will most nearly escape their ravages, in which the sanitary conditions are the best. It must be said however, that epidemic diseases are sometimes generated right in our midst. The hundreds and thousands of privies, filthy barnyards, ill-ventilated and badly-kept basements and cellars, etc., etc., are often responsible for the prevalence of scarlet fever, diphtheria, and other maladies among children. Strict cleanliness everywhere enforced, is the great cure-all for diseases that become epidemic. The hygienists as a rule are opposed, not only to vaccination, but to the introduction of any serum or other for-

eign substance into the blood. It is hard enough to keep poisons *out* of the system, without introducing them purposely into the circulation, as in vaccinating.

Many children (and some adults) die of tetanus or lockjaw, as a result of vaccination. This of itself ought to be a warning to every mother. Moreover, the very fact that a poison is introduced into the blood, predisposes the individual to *other diseases*, as measles, scarlet fever, erysipelas, &c. I know a little girl, who, until she was three years old, was remarkably free from most of the affections incident to childhood. But about that time she was vaccinated; and within the next twelve months she had measles (a very severe attack), throat trouble, and ever so many other ailments in rapid succession. The child's vitality had been *lowered* through the vaccinating process, and she suffered from various diseases in consequence.

It is not generally understood, that introducing a poison into the system *weakens vital resistance*, and exposes the individual to all manner of eruptive and other diseases—a fact that was pointed out years ago, by more than one celebrated English physician. Some valuable testimony has been collected on this point; and if we but keep our eyes open, and make a note of what transpires around us, the proofs can be obtained first hand. The way to aid vital force in resisting morbid influences, is to *keep the blood pure*, thus maintaining a good degree of general health. This is done, not by taking drug medicine, nor by introducing serums and other poisons into the blood, but by supplying those agents and influences which are conducive to health. Keep vitality *at its best*, and disease as a rule will not come near us. Even smallpox, if contracted by one who lives correctly, will be so light in form as scarcely to

make the patient sick; a little feverishness, a slight headache, and a few scattering sores, is about all there is to it.

One of the strongest arguments against vaccination, is that by it *other diseases* are communicated to the individual. Among these are syphilis, tuberculosis, and other maladies which endanger life and health.—But the physician will tell you that *he* uses only pure lymph—cow virus. Just as if pus obtained from a sore on a cow or calf could be pure! The very idea is preposterous; the sore itself was produced by an effort at vital resistance. The animal's system was endeavoring to throw out the impurity which had been introduced into the blood; suppuration took place, and the sore developed. There is no such thing as pure virus; it is filth, and nothing else. And just as soon as it is introduced into the human system, this too makes an effort to throw out the poison; vital resistance is set up, in order to expel it.

When smallpox or other filth disease prevails, either in our towns or cities, the thing to do is to clean up; remove every form of filth, in the streets, back alleys, door-yards, and elsewhere, and then make it a point to *keep* clean. That is the way yellow fever has been run out in many places, and the same thing applies to smallpox and other epidemic diseases.

The best *treatment* for a child that has been vaccinated, is to remove as rapidly as possible the virus which has been introduced into the blood. Drinking an abundance of pure soft water will favor its elimination. Care in regard to diet, will also do much to lessen the evil effects of the disease. Supply pure foods, as fruits and cereals, and feed in moderation; on no account should we surfeit the system. The free use of the full



warm bath, or the wet-sheet pack (see page 406) if there is good surface reaction, will help to throw out the poison by cutaneous depuration. Anything that will make the patient *sweat profusely*, will have a good effect. Move the bowels freely in the start, with injections of tepid or warm water (see page 420), and do not disturb them much afterward; when we are trying to promote cutaneous depuration, the intestinal tract should be kept relatively quiet.

If there is feverishness, sponge the body at frequent intervals with tepid or warm water; and where the temperature runs high give nothing to eat except fluids, as barley water, rice gruel, fruit juices, etc. In short, treat as in any other fever; and if there is considerable heat in the stomach or bowels, apply a wet compress, changing before it gets dry; its temperature should be that which is most agreeable to the patient. If there is much inflammation in and around the sore, apply wet compresses over the affected part, and change them often.

### *Erysipelas.*

Erysipelas is an acute disease, and more or less infectious. It is characterized by fever of low type, and a peculiar inflammation of the skin, especially on the neck and face. This inflammation has a marked tendency to spread to neighboring parts; to induce serous infiltration and suppuration of the areolar tissue, and to affect the lymphatic vessels and glands. It often develops in wounds after surgical operations, particularly in hospitals. The period of incubation is from seven to ten days.

The *causes* of erysipelas are impurities in the blood, these usually resulting from bad habits in eating and

drinking, breathing foul air, etc. It prevails largely among the very poor; though it is often seen among the well-to-do. Anything that renders the blood impure, will predispose to this disease. One writer remarks that the habitual use of swine's flesh, greasy cakes, and other articles of food which contaminate the blood, are prominent etiological factors. An exciting cause, is exposure to extremes of temperature.

In the way of *treatment*, first of all, give one or two full injections of tepid or warm water (see page 420), in order to clear the intestinal tract. After that, disturb the bowels but little; if there is fecal matter in the rectum remove it, but do not give very full enemas unless there is need. Make cool or cold applications to the head or other part affected, using ice if necessary, and try to keep down the inflammation. Derivative treatments, as hot sitz and foot baths (see pages 384, and 386), will tend to draw the blood away from the head, and check the inflammatory action. Warm wet compresses applied to the legs and feet, will also have a good effect. And where there is considerable heat in the abdomen, or over the liver and spleen, a wet compress cool or cold applied to these parts, will send the blood to the extremities and help to balance the circulation. See that the feet are kept warm at all times.

If the temperature rises much above the normal, reduce the heat by frequent spongings with water that is warm or tepid. A compress over the abdomen, will help to reduce the surface heat; it should be changed before it gets dry. After giving the sponge bath (see page 369), it is better to leave the compress off for at least half an hour.

Aside from local applications, the treatment is about the same as for any other fever; reduce the surface heat

by repeated spongings, and feed very lightly until the patient is convalescent; see Foods in Fevers. A little fruit, as fresh oranges, and fruit juices or other cooling beverages, is about all that the patient will need until the fever subsides. Then begin with a thin gruel well cooked, soft-boiled rice, a bit of toast, or other simple article of diet. Give from the start, all the cold water that the patient will take; this will help to cleanse the system, stimulate cutaneous depuration, and aid in expelling impurities.

### *Cerebro-Spinal Fever.*

The disease here described is also called cerebro-spinal meningitis, purpuric fever, spotted fever, meningeal fever, etc. It is infectious, and probably contagious. The malady is characterized by severe headache, nausea, vomiting, disorders of the special senses, delirium, and other symptoms which are found in putrid fevers. The attack usually begins with a chill, which may be light or severe. In children, it is sometimes ushered in with a convulsion. Delirium is a very common symptom; the child may cry out, or continue to mutter. Often there is stiffness of the neck, and the head is drawn back. After the disease is fully developed there is great restlessness; and drowsiness or stupor may supervene. The face may be pale, or congested. The skin is very sensitive, and an attempt to move the child causes pain. In some cases there is jerking of the limbs; or it may be a simple twitching. Strabismus is frequently met with in children. The pupil is generally dilated, though it may be contracted. In malignant epidemics of the disease there is a dusky mottling of the skin, the color being purplish. The temperature is exceedingly varied; in children, it usually rises early to 100° or 101° F.;

though in fatal cases, it may be as high as 107° to 110° F. The pulse is weak and rapid. The disease may reach its height in from three to eighth days, then pass into stupor and coma; or, the patient may convalesce. In the worst forms, collapse often takes place in a few hours.

Quoting from medical books, the *cause* of the malady is not well understood. Most writers believe that it is due to a specific micro-organism; though in many cases which have appeared sporadically and presented all the signs of the epidemic disease, *various* bacteria have been found, and the etiology could not be distinctly made out. As in other putrid fevers, bad air, bad water, and an unsanitary environment, are etiological factors. The disease is most common in the winter and spring months, when the houses are shut up and fresh air is excluded. Injuries to the head, are given as causes of this fever. Cerebro-spinal meningitis is sometimes produced by allowing a sick child to lie too long in one position, especially on its back; this will congest the cerebral membranes and also the spine, and very serious results are apt to follow. The same thing may happen with an adult, in any severe fever; the position of the patient should be *changed* at frequent intervals; he should not only be turned from side to side, but moved to a cool place in the bed, or to another couch. A foul or gross condition of the system will not only predispose to the disease, but greatly aggravate it.

The *treatment* will vary in different cases, and according to whether the attack is mild or severe. Unfortunately, this fever usually prevails in the malignant form, and is epidemic in character. The first thing to do, is to remove if possible the cause or causes which have produced it; either that, or take the patient to

some healthy locality. If the causes continue to operate, they will intensify the disease. By all means, keep drug medicines away; and endeavor to improve the environment. As the fever is infectious (in the malignant form at least), other children should not be exposed to it. Put the patient into a light airy room, admit the sunshine, and pay strict attention to thorough ventilation; if it is cold weather keep the fire running, and then let in plenty of fresh air.

In the chilly stage put the patient in bed, cover with blankets, and have a bottle of hot water at the feet; also one at the spine. After the chill passes off and the fever begins to rise, cover the patient more lightly. As soon as it can be done with comfort, give a full enema of tepid or warm water (see page 420) and evacuate the bowels; if they are much constipated, the injection may have to be repeated. Relieve the thirst by having the patient drink freely of pure soft water; or if this is not relished, give rice-water, barley-water, or any cooling beverage that he will take. Fresh oranges are excellent, using only the juice; it may be diluted, if the patient prefers. Or he may take a lemonade slightly sweetened. The juice of any fruit that is relished, will have a good effect; sweeten but little. The more we can dilute the blood with water, light beverages, &c., the better it will be; this will aid the various depurators in the work of elimination, reduce the temperature of the body, and help the system to free itself of impurities. If the patient vomits, give *hot* water to settle the stomach; then follow with cool or cold, as much as he will take.

In the meantime give small injections of water, cool or cold, and let it be absorbed if the patient can retain it; which will help to keep down the fever. As the tem-

perature rises sponge the body at frequent intervals, and dry with a towel. Little or no rubbing is needed, except it be to the feet; see that these do not get chilly. If there is great heat in the head and spine, sponge the latter often with water that is cool or cold; also turn the pillow (or change it) every little while; one of hair is better than feathers. A good way is to fold a sheet to the right size, lay it over the pillow, and then keep the head cool by frequent spongings. If the folded sheet gets wet, change it for another. Try in every way possible to *restore balance* to the circulation; this is done by cooling down the overheated nerve centers, and keeping the *extremities* warm. Examine the chest and abdomen from time to time; and if there is great heat about the floating ribs (congestion in the liver and spleen), or in the abdomen, apply cool or cold compresses over these parts, and change or renew before they get hot.

Give a full enema every morning or when the fever is lowest, and remove any foul matters that may be lodged in the intestinal tract. If the patient can be made to take an abundance of pure soft water, or of any beverage, as barley-water, toast-water, fruit juices, etc., it will help to cleanse the system, remove impurities from the blood, and the disease will be milder in character. As in any other case of poisoning, the object sought is to dilute the virus, and convey it out of the system as rapidly as possible, doing this in such a way as not to exhaust the strength of the patient. When the fever is highest give frequent spongings over the surface of the body, to reduce the heat.

After the disease has passed its crisis and the patient begins to convalesce, *discontinue* most of the treatment. When the temperature returns to normal, scarcely any active treatment is needed; even the bowels should not

be evacuated so often; every second or third day would probably be often enough. As the appetite returns feed lightly, beginning with gruels well cooked. If a change is desired, substitute soft-boiled rice and a bit of dry toast; or a little toast and cooked fruit may be eaten. The great danger now is in overfeeding; if the patient is weak feed oftener, and only a little at a time. As the strength increases, change the character of the diet to suit the conditions, but do not make the changes too rapidly. A bit of toast, a soft-boiled egg, mush and milk, rice and milk, are some of the articles that are admissible; the careful mother (or the nurse) must use her judgment in these matters—never leave it to the patient.

With treatment as here directed, the mortality in this disease would be greatly reduced. The lack of bathing and other water appliances, the use of drug medicines, and the injudicious feeding that is often recommended,—these are the things that complicate the disease and make it more dangerous.

Where the attack is mild in character, treat as in any other simple fever. Keep the head cool, and the extremities warm. Reduce the temperature of the body by sponging frequently with tepid or warm water, and apply cool or cold compresses to parts that are congested. When convalescence begins, treat lightly or not at all; then feed judiciously, as per directions already given.

#### *Chicken-Pox.*

Varicella or chicken-pox is a mild eruptive disease, slightly contagious, and almost wholly confined to children. It usually occurs in epidemics. The period of incubation is about two weeks. Often the *eruption*

is the first thing noticed; it consists of roundish or irregular and slightly raised spots, these ranging from the size of a pin's head to that of a pea. In the center of each is a little vesicle, filled with a watery fluid; the spots are few in number, and never have a depressed center as in smallpox. When scratched, the eruption comes out in successive crops, each continuing for two or three days. About the sixth day the vesicles dry up, and are covered with little brownish scabs. The sores appear on the body and extremities; occasionally on the forehead and in the mouth. During the eruptive stage there may be slight fever, aching of the head and limbs, and sometimes there is nausea.

Very little *treatment* is required; move the bowels once or twice at the commencement of the disease, by giving enemas of tepid or warm water (see page 420), and feed lightly until the attack is over. If there is considerable fever, reduce the temperature by sponging the body frequently with tepid or warm water; you may also apply a wet compress, warm or tepid, over the abdomen, changing before it gets dry. Usually the patient is well in a few days; though if the system is in a gross condition the attack will be more severe, and will last a little longer.

### *Measles.*

This disease is infectious as well as contagious, generally occurs in epidemics, and prevails chiefly among children. The first symptoms are catarrhal, very much like an ordinary cold; the eyes are red and watery, and there is a hoarse dry cough. Sore throat is sometimes complained of. The attack may begin with a chill or chilly sensations, followed by fever, the temperature



rising to 101° or 102° F. About the end of the second day the fever abates, but the catarrh continues. On the fourth day an eruption of a crimson color appears on the face, extends to the neck, and to other parts of the body. At first it is in the form of dots, slightly elevated; these coalesce into irregular circles or crescents. With the appearance of the eruption the fever returns, and the catarrh is aggravated; the discharge instead of being clear and watery, usually becomes thick, turbid and yellowish, and extends to the bronchial mucous membrane. About the ninth day (the fourth of the eruptive stage) the rash fades, the symptoms abate, and there is slight desquamation; though the catarrh and cough may remain for a much longer time.

The above describes a typical case; often however the symptoms are much milder in character. In severe attacks the tonsils are more or less inflamed, and sometimes the disease is complicated with pneumonia. Infants frequently have convulsions. In some cases there is inflammation of the eyes; also of the bowels.

Unless the illness is severe, not a great deal of *treatment* is required except good nursing. Where the eruption is slow in coming out, give a full warm bath; or the warm wet-sheet pack (see page 406) is excellent. Drinking an abundance of cold water, will also facilitate the process. When the temperature rises, either sponge the surface of the body often with tepid water, or apply cold compresses to the abdomen, removing these as they get too warm. Small enemas cool or cold, will help to keep down the fever. In drying the skin after the bath, be careful not to rub it harshly; a good way is to take up the moisture with soft towels. If there is much irritation of the skin anoint it with olive oil or other unguent. Not frequently there is a slight diarrhoea, but

this is not apt to be serious; a small cool enema given after each passage, will generally check it.

If there are croupy symptoms, apply cold compresses or ice to the throat; or if this does not afford relief, use hot and cold alternately. Thorough ventilation night and day, is a very essential part of the treatment. While there is feverishness, give the patient all the cold water he wants; or acidulated drinks if he prefers them.

A fresh orange is often relished, rejecting the pulp; or the juice of other fruits diluted and slightly sweetened, may be taken if liked. Little or no solid food is required until the patient begins to convalesce. Then give gruels, dry toast and fruit, soft-boiled rice, or other simple articles of diet; see Foods in Fevers.

After the patient recovers, disinfect everything; the clothing, bedding, etc. This is usually done by closing the room airtight, and burning sulphur in it; then thoroughly air and cleanse the room. The desquamation may last three weeks or longer; and while this continues, there is danger of communicating the disease to other children.

### *Scarlet Fever.*

The malady here described, is one of the most dangerous of all eruptive diseases. This is partly due to the nature of the affection, but in a great degree to the methods employed in treating it. The use of drug medicines, even in as simple a thing as measles, will often kill the patient, particularly if they are administered just at the time the eruption is trying to make its appearance on the surface of the body.

Scarlet fever is highly contagious, and also infectious; hence the need of strict quarantine, quite as much as in diphtheria and smallpox.—The first symptoms

generally develop in from four to seven days after exposure. The attack begins with a decided chill, followed by high fever and a rapid pulse. At the end of twenty-four hours a bright scarlet rash comes out on the neck and chest, this spreading over the entire body in a short time. The eruption at first consists of innumerable red points; these rapidly coalesce, so that in a few hours the flush is universal. On pressure the skin looks pale, but recovers its redness after the pressure is removed. With the appearance of the rash the skin becomes burning hot. The patient has headache, is restless, and in severe cases there is delirium. Nausea or vomiting is often one of the first symptoms, and in children there may be convulsions. During the eruptive stage, the mucous membrane is involved as well as the skin; the eyelids, lips, edges of the tongue, the nostrils and palate, exhibit a bright red color; the tonsils are enlarged, the throat is sore, and there is difficulty in swallowing. The tongue at first is furred, later scarlet with prominent papillæ, especially on the tip and borders—the “strawberry tongue.”

After the rash is well developed the skin feels rough to the touch, and is sometimes studded with small miliary vesicles. Usually about the fifth day the rash begins to decline, disappearing wholly by the eighth day. Two or three days before this, desquamation commences on the first parts affected, then extends over the body. On the trunk and limbs the cuticle comes off in the form of scurf, and from the hands and feet in large scales. The fever disappears with the rash. Scarlet fever does not in all cases run a typical course. A great deal will depend upon the condition of the individual at the time; if the blood is impure the attack will be much more severe. It is believed too that there is a difference in

the severity of the epidemics; that some of them are far more malignant than others, and that the disease may wear itself out so to speak, becoming milder in character. Be this as it may, there seems to be no uniformity as regards the morbid manifestations seen in different cases; there is every degree of severity, and a corresponding fatality. For this reason, many writers give three classifications of the disease; *scarlatina simplex*, *scarlatina anginosa*, and *scarlatina maligna*. In the first named, the symptoms (milder or more severe) are very nearly as above outlined.

In *scarlatina anginosa*, there is in addition to the symptoms already given, severe inflammation and swelling of the nose, palate, tonsils and pharynx; also of the neighboring glands in and about the neck and throat, causing great difficulty of breathing and swallowing.

In *scarlatina maligna*, there is intense inflammation of the throat at the outset, which is followed by deep ulceration and sloughing. The salivary glands are greatly enlarged; the eruption is dark red in color, comes out in irregular patches, and often disappears suddenly. The pulse becomes rapid, and the temperature may reach 107° to 110° F. Muscular twitching is common, and not unfrequently there is delirium; or the patient may drift into coma, and die in that condition.

The above group of symptoms is indeed fearful. And yet, where the child is in good condition physically, the disease is sometimes exceedingly mild in character, the patient hardly being sick enough to go to bed. In such cases there is feverishness, a little headache for a day or two, and a very light form of rash followed by a corresponding desquamation from the skin. The entire attack is of short duration, and the child recovers rapidly.

The *complications* most frequently met with in scarlet fever, are inflammation of the ears, affections of the joints, and acute nephritis or inflammation of the kidneys. This latter often gives rise to dropsy. Besides the complications here named, inflammation in and around the heart, pleurisy, broncho-pneumonia, hypertrophy of the nostrils and chronic nasal catarrh, are among the sequelæ. Cardiac dilation, cerebral lesions, etc., are also mentioned; and in some cases there is diarrhœa, or dysentery. It must be said, however, that the drugs administered have more to do in producing these complications, than the disease itself.

The *causes* of scarlet fever may be summed up in one word—*filth*. Many writers believe that the kind of filth which is found in vaults and privies, is a prominent etiological factor. I have known instances in which children that had not been off the premises had scarlet fever, not in its severest form, but sufficiently characteristic to identify it. The contents of a privy vault near by gave off foul exhalations, the children breathed the air so contaminated, and scarlet fever was the result. As a rule, however, the *contagium* is conveyed from one individual to another. The fact is well known, that a house in which there has been a scarlet fever patient, has communicated the disease to its inmates years afterward. The poison may also be conveyed to distant parts in clothing. The period of incubation is short, usually one to seven days. The symptoms are so characteristic, and the development of the disease so rapid, that there is little or no difficulty in making a *diagnosis*; the eruption alone where it is well marked, will often be sufficient; not to mention the sore throat scarlet red, the strawberry tongue, and the general appearance of the mucous membrane of the mouth, throat and nose.

The *prognosis* will depend chiefly upon two things; the condition of the child at the time of the attack, and the kind of treatment that is employed. In years gone by, hundreds and thousands of children died annually, not so much from the malady itself, as from the deadly drugs that were administered. There is scarcely a disease incident to childhood, fraught with so much evil in this respect, as scarlet fever. A single dose of mercury or other antiphlogistic medicine, will often change the direction of the remedial effort, and lead to a fatal ending. Some cases have come under my personal observation, in which mercury and other drugs administered in the early stage of the disease, so changed the character of the remedial action that the *rash never appeared*. There are indeed few eruptive diseases, in which it is so dangerous to greatly disturb the intestinal tract at the time when nature is doing her best to throw out the poison through that safest of all depurators, the skin. Even in smallpox, the danger is hardly so great; though in every eruptive disease it is perilous to disturb the bowels or other internal organs, when the remedial action is strongly determined to the surface of the body. Nature knows what she is about; and he is a wise physician who will endeavor to aid her—not thwart her purposes.

The *treatment* in scarlet fever is exceedingly important; though better a hundred times give no treatment whatever, than to administer drug medicines. If the patient gets well after a course of drugging it will be *in spite* of the medicines, not because of them. When the chill has passed off and the fever rises, give a full warm bath; have the water the temperature that is most soothing to the patient, and keep him in it for some time provided he is comfortable. Then dry the skin without

friction, and put him back in bed. See that the extremities are warm; if they are the least bit chilly, place a jug of hot water at the feet. Where the patient is too sick to have the full bath, or if there are not conveniences for giving it, sponge him from head to foot with tepid or warm water, keeping the lower extremities covered while you bathe other portions of the body.

Some time before the bath, the bowels should receive attention; if they are at all constipated, or if there has not been a recent evacuation, give a pretty full enema of tepid or warm water (see page 420) to remove any fecal matter that may be lodged in the rectum or colon. When the bowels have moved sufficiently, do not disturb them further without special cause. Nature's way of throwing out the poison in this disease, is mainly through the skin and mucous membranes; and no treatment should be administered that will *change the direction* of the remedial effort. Keep the intestinal tract relatively free from disturbance; then treat in such a way as to reduce local inflammation, and promote action through the skin. If the patient will take it, have him drink an abundance of pure soft water at stated intervals; it may be hot or cold, as he prefers. It is highly important in these cases to dilute the poison in the blood, by the free use of water or other fluids; this will also stimulate cutaneous depuration. If the rash is slow in coming out, or if it shows a tendency to recede after it has appeared, either sponge the body with hot water or give a full warm bath. If the patient is thirsty let him have bits of ice to suck, or he may take sips of cold water if he likes.

As a rule, there is soreness in the throat almost from the first. To relieve it give bits of ice, having the patient hold them far back in the mouth until they melt.

Then envelop the throat in cold compresses, changing them at frequent intervals, and using pounded ice where the inflammation is severe. If at any time there is a condition of *stasis* in the capillaries, the skin about the throat feeling cold and clammy, then remove the compress and apply hot for a short time, say five to ten minutes, or until normal heat returns to the part. When this is done, envelop the throat in a tepid or warm compress, leaving it on for a while, but watching the throat carefully. Just as soon as the skin becomes hot apply cold to it, and reduce the heat. The swelling in the glands is kept down in the same way; the persistent application of cold, or of hot and cold alternately, will send the blood away from the congested tissues, and reduce the inflammation.

Where the patient is able to take it, the warm sitz bath (see page 384) will have a very good effect; or you may combine the sitz and foot, which will be still better. But if the patient is too sick to sit up, even long enough for the sitz, the hot foot bath (see page 386) may be given in bed; then dry the feet thoroughly, and put a jug of hot water to them. Give special attention to ventilation at all times, care being taken to protect the patient from drafts. The proper temperature for the room is 68° to 70° F. Cover the patient with blankets (light and porous), and avoid overheating him. The atmosphere in the sick chamber should be relatively moist, rather than dry. You may keep a kettle of boiling water in it, for the purpose of vaporizing the air; and if the throat is very sore, breathing the hot steam from a teakettle or other vessel filled with boiling water, will relax the parts, and make the throat more comfortable.

Where the child is old enough to take it, a gargle of



either hot or cold water may be employed; a solution of peroxide of hydrogen is also good, either for a gargle or a spray. Where there is acute inflammation of the throat, as in scarlet fever and diphtheria, pineapple juice is highly recommended; it may be more or less diluted when used as a gargle. If there is much heat around the body, either in the liver or spleen or in the abdomen, apply a wet compress made of several thicknesses of old crash toweling; have the temperature that which is most agreeable to the patient, and cover with a single thickness of dry flannel. Change the compress before it gets dry, or very hot. The more nearly we can *balance* the circulation, the sooner the patient will get well; we must cool the hot parts, and warm those that are chilly. If we can keep the blood *moving*, not merely in the larger vessels but in the surface capillaries, we shall prevent severe congestion with disorganization of tissue.

In mild attacks (scarlatina simplex), not a great deal of treatment is needed; move the bowels once in the start, and keep down the fever by frequent spongings; also apply cold to the throat if the heat is excessive. In some of these cases where the surface heat is considerable, and pretty well diffused over the body, the warm wet-sheet (see page 406) may be employed, keeping the patient in it half to three-quarters of an hour; then sponge him quickly with tepid or warm water, dry well, and put him back in bed with something warm at the feet.

The rule in regard to diet, is the same as in other fevers. Allow plenty of cold water to drink; also cooling beverages, as the juice of fruits. Scarcely any food is required until the fever abates; then feed lightly, commencing with fluids. When hunger returns, a thin

oatmeal gruel well cooked and strained is about as good as anything. If the patient tires of this, you may substitute a gruel of rice, barley or other cereal. Give no solid food until convalescence is well established. Should there be some looseness of the bowels, as diarrhœa, inject a small quantity of cool or cold water after each passage. Diarrhœa is not apt to occur where the patient is properly treated. If there is nausea, give sips of hot water; also lay wet cloths over the stomach, these being cool or cold.

Should complications arise, treat them according to the needs of the case; though if no drug medicines are given to the patient, complications, as a general thing, will be conspicuous by their absence. Nature's plan is to throw out the specific virus mainly through the skin; but if we interfere with the process of elimination by introducing drug poisons into the system, the life of the patient will be endangered.

When the period of desquamation begins, give a light sponge bath, say every morning; and after drying the skin anoint it with olive oil, vaseline, or other unguent. This will keep the scales from flying about and filling the atmosphere, thus spreading the disease to neighboring localities. It is largely by means of these scales, that the contagium is carried from place to place. The patient should have a light airy room, one that can be thoroughly ventilated day and night. Where the house and rooms are kept closed, the whole atmosphere inside is very soon contaminated, and the place becomes a veritable hotbed of infection. Such articles of furniture as tablecloths, window curtains, carpets, etc., should be removed from the room in the start. All clothing, etc., used about the patient, should either be burned or disinfected by boiling; some physi-

cians recommend keeping a tub two-thirds filled with a strong disinfecting solution, and all the cloths, sheets, etc., used in the sick room are thrown into it as soon as removed.

After the patient has entirely recovered, the room he has occupied and everything in it should be thoroughly disinfected. One of the best methods is to close the room airtight, and burn sulphur in it; place in an iron kettle or skillet some live coals, and lay sticks of sulphur on them; two pounds to a room would probably be enough. Keep the apartment closed for twenty-four hours; then if there is paper on the walls, remove and burn it.

### *Diphtheria.*

The malady here described is highly infectious, and often occurs in epidemics. Children under ten years of age are the most frequent victims. The period of incubation is usually from two to five days, though it may be longer.

*Causes.*—In this, as in other infectious diseases, the causes are of two kinds; the predisposing, and the exciting. Chief among the *predisposing* causes of diphtheria, are unsanitary conditions, either in and around the house or elsewhere, and the state of the individual at the time of exposure; if the blood is filled with impurities he will more readily fall a prey to morbid influences, and might contract the disease when otherwise he would escape. Not only so, an unhealthy condition of the throat, whether from eating incorrectly, breathing bad air, or from some other cause, will render the individual more susceptible to diphtheritic affections. Hare, in his Practice of Medicine, says, there can be no doubt whatever that chronically enlarged ton-

sils, catarrh of the naso-pharynx, etc., very materially increase the susceptibility of the child to diphtheria. One attack predisposes to another.

The *exciting* cause is infection, which may be communicated in a variety of ways; as by direct contact with the shreds thrown off from a diphtheritic mucous membrane, or by inhaling the air which surrounds the patient. The contagion not unfrequently adheres to clothing, books, letters, drinking cups, etc.; or it is contained in water, milk, beer and other fluids. Some writers are of the opinion that the diphtheritic poison is now and then conveyed by sewer gas. It is thought too that domestic animals, as cats and dogs, are often the means of spreading the disease.

According to the later medical authorities, the specific *germ* in diphtheria is the Klebs-Loeffler bacillus; though other microbes are often found associated with it. How, when and where this particular organism is generated, and what conditions favor its propagation, are questions of very practical importance. It is believed by many, that the germs which give rise to this and other infectious diseases, are *generated* in decomposing animal and vegetable matters. One prominent physician states, that prolific sources of diphtheritic affections, are neglected cesspools, foul vaults, leaky sewers, damp, unventilated cellars, moldy walls, etc., these being the favorite haunts of microbes and other destructive organisms. He believes diphtheria may very appropriately be included in that class of maladies known as filth diseases; and that the parasitic organisms by which it is caused, are *identical* with those which flourish in decomposing and putrefying organic matter.

The *virulence* of the attack will be more or less modified by the physical conditions of the individual; if the mucous membranes of the throat and other parts of the body are healthy and intact, this will greatly reduce the susceptibility to the contagion. Quoting from Hughes, bad hygiene, not only increases the virulence of the disease, but aids in its diffusion. "The poison exists in the exudation and secretions of the fauces and saliva, but not in the breath, and floats in the atmosphere at a considerable distance from the patient. The virus adheres to the clothing, the bedding, the furniture, and the room which the patient occupied." This affection is generally more prevalent in cold weather, when people are housed up too closely; often it follows whooping-cough, scarlatina, typhoid fever, and other filth diseases.

What is termed the New Hygiene consists in making the blood so pure, and the body so clean inside and out, that the individual will scarcely be susceptible to disease-producing agencies. Dr. J. H. Kellogg, in writing upon this subject, says, that it is possible to maintain such purity of blood and tissues by a correct mode of life, that the so-called disease germs will not affect us seriously. They can hardly obtain a foothold in a thoroughly healthy body; and if they do, their power to injure will be very slight. He declares that germs are really scavengers; and it is only when the body has been reduced to an enfeebled condition by wrong habits in eating, drinking, etc., that these organisms can do us harm. "The blood is the life; and *pure* blood means vigorous life." The great problem then is, to live in such a way that we will be proof against infectious and other diseases. "We shall never be able

to cleanse the earth from bacteria, but we may live so close to nature that germs will cease to be a terror to us."

*Symptoms.*—The symptoms of diphtheria will depend very much upon the severity of the attack; in other words, upon the state of the system at the time of exposure. If the tissues of the body are healthy and sound, the blood being relatively pure, the invasion may be mild; the attack begins with a chill or chilly sensations, followed by fever, headaches, loss of appetite, slight soreness of the throat, stiffness of the neck, and tenderness about the angles of the jaw. Where the onset is more severe, all the symptoms will be intensified; there is more fever, the temperature sometimes being as high as 103° F. in the first twenty-four hours. There is more pain on swallowing, and there may be one or several white patches on the tonsils. These patches are the beginnings of the *false membrane* which is so characteristic of the disease. The membrane often spreads with great rapidity, and may extend to the pharynx, the uvula, and the nose; more rarely to the bronchial tubes. It is of a dirty grayish color, and in many cases becomes shaggy. The glands at the angle of the jaws are nearly always enlarged. The tongue is coated, the breath offensive; and sometimes there is nausea with vomiting. In the malignant form the patient is often extremely prostrated; the pulse is weak, and it may be slower than normal; the neck is swollen and shiny; the false membrane develops rapidly. The urine too is scanty and high colored, and often contains albumin.

Where the inflammation extends to the larynx it produces hoarseness, or there may be complete loss of voice; the cough is croupy, and there is difficulty in

breathing. The kidneys are said to be always more or less affected in diphtheria; in some cases they undergo a granular degeneration, and the blood becomes black and thin. *Paralysis* every now and then follows a diphtheritic attack; it may affect the muscles of the throat, the heart, the eye, or other parts of the body. Sometimes one whole side is considerably involved; or the loss of function may be confined to the legs. To what extent the paralysis is due to the mercury, strychnine, quinine, and other drugs that are administered, is a question of interest; patients who are treated without drug medicines, are not apt to suffer in this way.

*Diagnosis.*—It is exceedingly important to make a correct diagnosis, and to do it as early as possible. This may not be difficult, especially if there is an epidemic of diphtheria prevailing at the time. Dr. J. M. Anders remarks, "That the false membrane on the fauces, and the presence of albumin in the urine, give us a practically certain diagnosis"; but that the only unequivocal evidence of the disease, is the finding of the Klebs-Loeffler bacillus in the membrane. In making a diagnosis, it must not be forgotten that diphtheria and scarlet fever are now and then associated together. Some of the contagious diseases, though really distinct in character, have a tendency to develop simultaneously in the same individual. Not only so, it is often extremely hard to find the dividing line between true diphtheria and some other throat affections. The latest writers, as a rule, place membranous croup (croupous laryngitis) in the list of diphtheritic diseases. There is however a difference of opinion on this point; some authors hold that the two affections are quite distinct from each other.

*Prognosis.*—This will vary according to the age and condition of the patient, and the extent of the local lesions; the danger is greater the larger the surface involved, and the more the exudate approaches the septic or gangrenous type. The chances of recovery will also depend largely upon the methods that are employed in treating; where much drugging is done, the disease will be extremely fatal. Treatment with *anti-toxin*—which is not half as bad in its effects as strychnine, bichloride of mercury and other drug poisons—is an improvement upon the older methods. The prognosis is always much graver in children than in adults.

In the severer forms of the disease, the mortality is very great. Often the patient seems to be getting along fairly well, then without warning succumbs to heart failure. The prognosis in *nasal* cases is the most serious, the patient sometimes dying of asphyxia. Or the membranous inflammation may extend to the bronchial tubes, and produce a fatal termination. Where the patient is seen early and treated according to rational methods, the number of deaths is greatly reduced.

*Treatment.*—The treatment usually prescribed in medical books, does not commend itself to the hygienist; the drugs that are often employed, are enough of themselves to kill the patient. The only way to cure, is to supply those conditions which will enable the system to eliminate the poison. The treatment required, is very nearly the same as for scarlet fever. The object sought is to regulate the general heat of the body, keep down local inflammation, and so *direct the remedial effort* as to prevent disorganization of the tissue. The child should be in a large airy room, well ventilated, and not too hot; 65° to 68° F. is about right. In



grave attacks, no heroic measures are admissible. The treatment should be commenced early, and administered with proper discrimination in different cases. If we can in a measure call the blood away (or force it away) from the throat and nose, and distribute it to other portions of the body, there will be less inflammation in local parts.

About the first thing to do, is to clear out the intestinal tract; give a full enema of tepid or warm water (see page 420), manipulating the bowels thoroughly while it is retained. Often a considerable amount of foul matter can be removed in this way. If a thorough evacuation is not secured by the first injection, let the patient rest a while and then repeat it. The enema may be given every day, until there is a change for the better; it must not come too near the bath or other active treatment. In the morning when the fever is not so high, is the best time for it. Where the patient is relatively strong, the reaction fairly good, the full warm bath once a day will have a most wholesome effect; though the half bath (see page 375) in which the lower part of the body including the hips is submerged in water, is excellent. The feet and legs, and also the back, should be vigorously rubbed with the hand while the patient is in the water. After drying thoroughly put him in bed, with a bottle of hot water at the feet.

Look well from the first to the condition of the throat; if the skin feels hot outside apply a cold compress around it, and change at frequent intervals; you may use pounded ice, provided the patient does not object. Also give bits of ice, to hold far back in the mouth until it melts. In making cold applications to the throat externally, see that *stasis* is not produced;

we must keep the blood circulating in the part, and avoid the accumulation of exudates. It is far better to prevent the *formation* of the diphtheric membrane, than to try to remove it afterward. Great injury is sometimes done, by endeavoring to loosen the membranes before they let go of themselves; this leaves a raw and bleeding surface, and they are immediately re-formed. Not only so, there is danger of blood poisoning from the absorption of foul matter. If after applying the cold for a time the skin feels sodden and clammy, remove the compress and foment the part, say for ten minutes, or long enough to re-establish the circulation in it.

An excellent plan of treating derivatively, and one that is much practiced by German physicians, is to envelop the feet and legs in warm wet compresses, which will increase the circulation in these parts, thus drawing the blood away from the head and throat, and relieving the local congestion. This treatment is applicable to nearly all patients, even those who are very sick. It can be substituted for the sitz and foot baths, warm or hot, which should be given to patients that are strong enough to take them. The mistake of many physicians, particularly in diphtheria, is in trying to "doctor the spot" when something else is needed; and this "something else" should be administered *before* the spot is too seriously involved.

In Germany, the hygienists or nature cure doctors have had eminent success, not only in treating diphtheria, but other diseases affecting the head and throat. It is by commencing *early*, before the local symptoms are so grave, that we are able, in a good degree certainly, to control the general circulation, *distribute* the remedial effort, and prevent those disastrous results

which are so often met with. In all acute diseases in which the throat and nose are much involved, as scarlet fever, diphtheria and croup, the German physicalians give gentle but thorough hand rubbings from time to time over the throat and chest, at the back and nape of the neck, and down the spine. These rubbings are very soothing to the patient; they also divert the flow of blood away from the engorged vessels, and into the surrounding tissues. This, with the packing and compresses over the trunk, and the *derivative* treatment employed, has a tendency to check the local inflammation, and relieve the throat and head.

The hygienists in Germany, lay much stress upon the importance of constitutional treatment in the *early stage of the disease*. Before the throat is seriously involved either a full or a three-quarter pack (see page 406) is administered, its temperature ranging from 73° to 77° F. After the pack the body is washed in water from 77° to 81° F., and vigorous hand rubbings are applied from head to foot. Then the patient is put into a warm bed with a jug of hot water at the feet. In the meantime, laxative enemata of from half to three-quarters of a pint of water are administered two or three times each day, at a temperature of 73° to 77° F. Subsequent small injections are also given, using half a wine-glass of water at 66° F. "By this means, whole masses of diphtheritic deposits are often removed from the intestinal canal."—The treatment here outlined seems pretty heroic; but it may be a question whether the milder methods which are sometimes employed, are any more successful. There is one thing however that we must constantly bear in mind; if the patient is very feeble, or if in the course of the disease there are signs of collapse, the treatment

administered must be mild in character. Keep the circulation in as good balance as possible, the extremities warm, and try to make the patient comfortable. [www.libtool.com.cn](http://www.libtool.com.cn)

In all diphtheritic cases we should begin early, not only to *force* the blood away from the congested tissues by means of cold applications to the throat, but to *draw* it away, and distribute it to other portions of the body, especially to the legs and feet. In addition to the local treatment already described, frequent inhalations of *hot steam* will be needed to soften and relax the mucous surfaces, loosen and detach the false membrane, and enable the patient to breathe easier. A very simple device is to fill a narrow-mouthed pitcher with *boiling water*, and have the patient hold his face over it, breathing in the hot vapor. If necessary, make a cone of stiff paper, and adjust it over the child's head and around the pitcher to prevent the escape of the steam. The vapor should be as hot as the patient can bear, say a temperature of 110° to 120° F. These inhalations may be given as often as every hour at first, and ten to fifteen minutes at a time; they will soften the parts very materially, and afford great relief. After the membrane has ceased to form, continue the inhalations of hot vapor every hour or half hour, and also apply hot fomentations (see page 413) externally now and then for ten or fifteen minutes.

Meanwhile, we must not neglect the *derivative* measures. If the patient is well enough, warm sitz and foot baths (see pages 384 and 386) should be given once or twice each day; or the half bath (see page 375) may take the place of these, rubbing the lower extremities thoroughly while he is in it. But if the child is too ill for this form of treatment, apply warm wet

compresses over the legs and feet, keeping them at the right temperature by means of hot-water bags. Remove the compresses before they get dry: then rub with a towel to take up the moisture, and follow with vigorous *hand* rubbing, both to the legs and feet. These must be *kept warm* at all times.

It is by such means that vital force will be controlled and directed, and the disease shorn of its terrors. If however the patient has been neglected in the earlier stages, and the inflammation has made considerable headway, it will take much longer to check the progress of the disease. In some cases, where the nose is much involved, the passages will fill up till the child can hardly breathe. No attempt however should be made to tear off the false membrane. If the inhalation of hot vapor does not loosen it sufficiently, a moderately strong solution of lime-water or vinegar may be used, applying it with an atomizer both to the nose and throat. Continue the spraying ten to fifteen minutes, and repeat at frequent intervals; the patient's face may be protected while this is done.

Where the child is able to swallow, pineapple juice taken in sips, is very beneficial; it seems to cleanse the throat, and promote healing. If swallowing is difficult, the juice (diluted if necessary) can be used as a gargle. Where the nose and throat are badly affected, keep the parts as clean as possible; a disinfecting solution may be applied with an atomizer, a syringe, or a swab. If the latter is used, great care must be taken not to irritate the mucous membrane, and produce lesions through which foul matter would be absorbed. A local application highly recommended in pharyngeal or nasal diphtheria, consists of one part hydrogen dioxide and five parts water, used either as a gargle or spray as is

most convenient. Boric acid solutions are also employed; or they may be alternated with hydrogen dioxide. One writer remarks that warm weak solutions thoroughly applied by means of the fountain syringe, are better than the more frequent use of the *hand* syringe. For children that are old enough to use it, a gargle of boric acid, or of listerine well diluted, may be employed to keep the nose and mouth clean.

In cases of very great danger, M. Platen, a German physician recommends the following treatment; pour from a moderate height the coldest water over the chest back, and nape of the neck, in a continuous stream; and as it falls, the skin where it touches is rubbed vigorously with the bare hand. "As soon as the child coughs and throws up mucus, it is saved." It is then placed (without wiping) in a dry blanket pack (see page 412), with a bottle of hot water at the feet. The object of this treatment is to cause a strong determination of blood to the surface of the body; and if sweating is produced, all the better. Special attention is also paid to the bowels; laxative enemata at 73° F. are given from time to time, to remove any offending material that may be lodged in the intestines; and if there is much fever, small injections of water at 63° F. are thrown into the rectum, these to be retained.—The writer here quoted remarks, that when the disease runs a favorable course its duration is about a week or ten days; and where proper treatment is administered, *sweating* sets in on the fourth or fifth day, and the crisis is passed.

In diphtheria, it is of the *utmost importance* that the air in the sick room should be kept as pure as possible, and not too warm. This is done by ventilating the room thoroughly at frequent intervals; and if there is an open grate, a good fire should be kept running

night and day. Then maintain the proper temperature by opening the windows and doors, so that fresh air shall be admitted at all times. Diphtheritic patients throw off an immense amount of impurity, not only from the mucous membrane, but from the skin; and the atmosphere in the room must be improved by the admission of fresh air. A plan sometimes resorted to where the air is not sufficiently pure, is to disinfect it with *ozone*. This may be generated as follows: Mix together in an earthen vessel or deep plate, three parts strong sulphuric acid and two parts crystals of permanganate of potash; then stir the mixture slowly with a glass rod or a stick.

As to the diet, scarcely anything is needed while the disease is in progress, except cooling drinks, as barley water, toast water, etc., and fruit juices if the patient can take them. Indeed, one of the prime conditions in curing, is not only to keep food away until convalescence begins, but to feed very lightly for some time afterward. There is hardly a disease, either among children or adults, in which the matter of diet is so very important. Even after a patient is seemingly out of danger, a little solid food, or food that is too hearty, may bring on a relapse with a fatal termination. There is not the slightest danger of the child starving; besides, the system is in no condition to digest food. There is danger in feeding; and the mother must use her best judgment in regard to it.—When the patient is well enough to sit up and get round the house a little, it will be time enough to think about what to feed, and how much. Before this, only fluids should be given, these very simple, and limited in quantity.

Usually the complication most to be dreaded in diphtheria is *paralysis*, either in the muscles of the

throat or elsewhere. This is more frequent in adults than in children. As a general thing, it passes off in from two to six weeks; though it may last several months. Where the case is seen early and properly treated, paralysis is not likely to develop. Should it supervene, the indication is to build up the general health. Attention to diet, bathing, exercise, fresh air, etc., is about all that is necessary. Regularity in the daily habits, a sufficient amount of sleep, and living out of doors as much as possible, will have a most wholesome effect. Gentle hand massage of the disabled muscles, is excellent; it will increase capillary circulation, and tend to restore normal function.

The modern and extensive use of *antitoxin* in diphtheritic diseases, has certainly brought about *one* very good result. Those who believe in its curative effects, have to a very great extent discarded other drug medicines. Such drugs as calomel, quinine, strychnine, whiskey, brandy, etc., are by no means so freely employed as formerly. The withholding of these poisons gives nature a chance, and the percentage of recoveries is greatly increased; though according to Hare, the deaths among children under two years of age, is still nearly 26 per cent. Treatment by strict hygiene from the start, would much further reduce the mortality list.

*Prophylaxis.* — As in smallpox, scarlet fever and other infectious diseases, every precaution should be taken to prevent the spread of the malady. The patient should be isolated from the rest of the family; an upper room in the house is preferable to one on the lower floors. Take from the room all carpets, rugs, window curtains, etc., to which disease germs might adhere; and leave nothing in it except what is needed for the patient's comfort. Only the nurse and the



physician should be admitted to the sick room; and all articles used by the patient should either be disinfected from time to time, or remain in the room until he has left it. A good plan is to immerse the bed linen and clothing in boiling water as soon as removed.

After the patient is able to leave the room, the latter and everything in it should be thoroughly disinfected. Mattresses, pillows, woolen garments, etc., are sometimes exposed to superheated steam, in establishments provided for that purpose; or they may be disinfected at the same time with the apartment which was occupied by the patient. There are various ways of doing this. One is to tightly close the room and fumigate with burning sulphur, allowing two pounds to every ten feet square. The sulphur may be placed in iron pans supported by bricks, and put in washtubs containing a little water. Then ignite the sulphur with glowing coals, or by burning a few drops of alcohol on top of it. Keep the room tightly closed for twenty-four hours. After the fumigation, the articles of clothing, etc., should be hung in the open air for several hours, and the floors and woodwork washed with a solution of corrosive sublimate, 1 to 1,000; also wipe down the walls with a similar solution—though if there is paper on them, remove and burn it before cleansing.

The physician and nurse should wash their hands before leaving the room, first with soap and water, and then rinse in the corrosive sublimate solution. The nurse should wear an overdress of washable material, slipping it off before leaving the room; and the physician in attendance should take a similar precaution. The patient who is convalescent must be kept isolated until thoroughly disinfected; give him a hot water and soap bath, then rinse the body with a solution of

bichloride of mercury, 1 to 2,000; or a 25 to 50 per cent. alcohol may be used instead. Do this two or three days in succession; also cut the hair and wash the head with one of these solutions. The child should be kept from school for thirty days, after his recovery is announced.

Quoting from Hare, "The garments, bedding and toys of all diphtheritic patients should be destroyed, or thoroughly disinfected by steam or formaldehyde. The floors and walls of the room and the furniture should also be treated with formaldehyde, and it should be done as thoroughly as if the case had been one of small-pox. All discharges from the patient should be received in a vessel containing bichloride solution; or if cloths are used, these should be burned."

### *Croup.*

Synonyms.—*Membranous Croup; True Croup; Croupous Laryngitis.*

True or membranous croup is defined as an acute inflammation of the larynx, attended with the exudation of a fibrinous secretion—the *false membrane*—and the occurrence of *spasm of the glottis*. It is characterized by febrile reaction, a frequent ringing cough, and difficulty of breathing. This affection is almost exclusively a disease of childhood; very fat babies are much more susceptible to it, than those who are thin and muscular.

*Causes.*—The etiological factors in this disease, are twofold; the physical condition of the child at the time, and the accident or incident which brings on the attack. The remote or predisposing causes are probably very nearly the same as in other affections of the throat. **If**

the various depurators are inactive, as from eating incorrectly, breathing bad air, insufficient bathing, etc., more work will be thrown upon the mucous membrane, and it is liable to become diseased. Children who are properly fed and otherwise well cared for, are not apt to suffer from croup.—The exciting cause as a general thing, is some slight exposure; the skin becomes chilled, cutaneous depuration is checked, and croup may develop.

*Pathological Anatomy.*—There is intense hyperæmia of the mucous membrane of the larynx, associated with swelling, œdema, and marked redness. Very soon there appears on the surface of the membrane a grayish pellicle, which becomes thicker. This is the beginning of the *false membrane*. At various points it differs in coherence, density, and adhesiveness. This membrane is usually found on the vocal cords, throughout their entire extent; it spreads over the ventricles, and is attached to the inner surface of the epiglottis. Successive deposits may occur, the first being softened by the serum which transudes, and is often detached and expelled in the act of coughing. The false membrane not unfrequently involves the pharynx; and it may extend into the trachea and bronchial tubes. As the inflammation progresses downward, the character of the exudation changes from fibrous to muco-purulent.

*Symptoms.*—The symptoms of this disease are highly characteristic. The membrane, which often forms rapidly, is apt to produce spasm of the glottis. The attack may come on suddenly, perhaps in the night; though sometimes it is preceded by a slight cold or catarrh, with hoarseness, cough, and running at the nose. In a well-developed case the cough is ringing or brassy, and at each inspiration a crowing sound is

heard. There is thirst, some fever, a feeling of heat in the throat, and the hoarseness increases. Difficulty of breathing follows, and often the child is unable to lie down; or if quiet for a moment it starts up in a fright, breathing heavily with a shrill whistling inspiration.

In severe attacks the patient seems as if he would suffocate, owing to spasm of the glottis which is paroxysmal. The child tosses about wildly, tears at its throat, and becomes purple in the face. To make breathing easier the mouth is wide open; the little one gasps, the body is bathed in perspiration, and suddenly the spasm is relaxed. Then the patient drops into a fitful sleep of a few moments' duration. The attacks return at short intervals; or there may be a decided remission between them, considerable portions of the false membrane having been thrown off. The child is generally worse at night; the effort to speak causes suffering, and it only whispers or refuses to utter a word. The appetite for food is lost, the bowels are constipated.

Where the case tends to a favorable termination, the paroxysms become less frequent. In coughing, bits of membrane are expelled from the throat, and the difficulty of breathing is not so great; the cough loosens, the voice gradually returns, and the fever disappears. Often however the patient grows rapidly worse; the suffocative attacks become more frequent, and the voice and cough are inaudible. The difficulty of breathing continues, and the respirations are gasping and shallow, but without the whistling noise. The face is more purplish in color, and the patient becomes drowsy; the eyes are dull and nearly closed. The pulse is rapid and feeble, and the skin is covered with a clammy sweat. The extremities are cold; coma supervenes, and death takes place from asphyxia. Sometimes there is entire

closure of the glottis, and the child dies in a spasm. The duration of the disease is usually about a week, though it may be longer.

*Diagnosis.*—This affection ought not as a rule to be confounded with diphtheria. According to some of our standard authorities, the two diseases have very distinct characteristics. Others however maintain that membranous croup and diphtheria are one and the same thing. Among those who hold to the former view, is Da Costa. He says: "Laryngeal diphtheria affects primarily the throat, and may extend to the windpipe; membranous laryngitis affects primarily the windpipe, and may extend to the throat." He also points out that diphtheria is contagious, and croup is not.

Bartholow, in his *Practice of Medicine*, says he believes that croup is distinct and separate from diphtheria, for the following reasons: "It occupies the larynx exclusively; it is a purely local affection; the exudation is *on* and not *in* the mucous membrane; and systemic poisoning or secondary septicæmia and infective embolic processes never result from it."

Dr. Daniel E. Hughes, speaking upon the same subject, remarks: "We cannot assent to the dictum of some authorities, that laryngeal diphtheria and croupous laryngitis are identical." He claims that in croup, the inflammation begins in the trachea and extends upward; that the exudation is never cutaneous; that there is no pain on swallowing; that there is no swelling of the submaxillary and lymphatic glands; that cough is always present, and often reduced to a mere whistle with a peculiar metallic ring; that the disease is not traceable to bad drainage; that it seldom occurs in adults; that it is neither contagious nor infectious; that the membrane does not extend to the nares; that there

are no symptoms of septicæmia; that there is no albuminuria; that the disease is neither attended with nor followed by paralysis; and that there is *absence* of a specific germ. In diphtheria, the disease begins at the tonsils and extends downward; the exudation is often cutaneous; there is often severe pain on swallowing; also swelling of the submaxillary and lymphatic glands; there is seldom much cough, and then only hoarse; the disease is often traceable to bad drainage; it often occurs in adults; it is both contagious and infectious; the membrane often extends to the nares, and many other parts; septicæmia is generally present; albuminuria is frequent; paralysis is not uncommon; and there is the *presence* of the Klebs-Loeffler bacillus.

In differentiating between croup and diphtheria, the author here quoted remarks, that in the latter, the exudation is not only upon but also within the substance of the mucous membrane; and that if in croup the false membrane is detached, the mucous membrane suffers no loss of structure. Butler, in his Medical Diagnosis, says: "Membranous croup is in the large majority of cases laryngeal diphtheria"; also that "The only absolute proof of the *existence* of diphtheria, is the presence of the Klebs-Loeffler bacillus." Dr. Dillon Brown, in an article on diphtheria, states, that there are cases of pseudo-membranous inflammation which are not diphtheritic; but that it is often impossible to distinguish between the true and the false diphtheria, except by a bacteriological examination; that the only positive test is the presence of the Klebs-Loeffler bacillus, either alone or associated with streptococci or other bacteria. In a certain proportion of cases however, it is very difficult to distinguish between the true and the pseudo-bacillus. In all such cases he

would isolate the patient, and treat as for true diphtheria, "until the diagnosis is made certain, either by a bacteriological examination, or the appearance of new evidence which will show the true nature of the disease."

*Prognosis.*—Croup, as well as diphtheria, is a very fatal malady; though if taken in time and properly treated, nearly every child could be saved.

*Treatment.*—This to be successful, requires promptness at every step. The disease often develops with the greatest rapidity; and a delay of even an hour or two, may cost the life of the patient. The rapid and extensive formation of the false membrane in the larynx and trachea, obstructs the breathing and renders the case dangerous; the child may choke to death in a short time. It is most fortunate if the physician is called to the case early; before the false membrane has formed. Treatment timely administered will prevent its development, and save the patient's life.

If hot water can be had, put the child into a **warm** bath up to the neck; keep him in it several minutes, and rub vigorously with the hand from the throat downward, giving special attention to the feet and legs. Then dry thoroughly, and put the patient into a warm bed with a bottle of hot water at the feet. This done, apply a very cold compress to the throat (using pounded ice if it can be had), and change before it gets too warm. Keep up this treatment until relief is obtained; though if the skin about the throat feels cold and clammy, remove the compress and foment the part; wring flannels out of very *hot* water and apply them around the throat, making the skin look red. Then leave on the compress (it will be warm or tepid) until the parts again feel hot to the touch. Watch the throat care-

fully; and if the heat becomes intense, again apply the cold. It is by keeping down the abnormal heat in and about the throat, that we prevent the formation of the false membrane. Be sure the extremities are kept warm, particularly the feet, as this will help to draw the blood away from the congested tissues.

Very good results are sometimes obtained, by applying to the throat hot and cold alternately; if we can keep the blood circulating in its vessels, and distribute it to other parts of the body, the local inflammation will be reduced. Faithful rubbing with the hand, first to the throat and chest, then to the back of the neck and down the spine, and finally to the legs and feet, will have a very good effect. The only caution to be given is not to continue it too long, and tire the patient. The rubbing (except to the neck and throat) should be done under the bedclothes.

Where the case is seen in time, the treatment above described will nearly always be sufficient; it will prevent the formation of the false membrane, and the child will promptly recover. But suppose the membrane has already formed, and so completely fills the windpipe that breathing is next to impossible; then we must treat in such a way as to *loosen* it. The alternation of hot and cold to the throat, and to the upper part of the chest, will help to soften and detach it. But there are other ways of aiding this process; one of the best is the inhalation of *hot vapor*, the same as in diphtheria. To have the resired effect, the steam should be as hot as the patient can breathe. The vapor of hot vinegar or of lime-water, is often employed for the same purpose.

The air in the room should be kept as pure as possible by thorough ventilation, and not too warm; 65° to 68° F. is about right. Keeping the air thoroughly



saturated with moisture by means of boiling water, is an important part of the treatment. Some physicians pour water over unslacked lime to produce steam, this being placed in a tub near the center of the room.

When other methods fail, the following heroic treatment has been tried with varying degrees of success. Put the patient into a warm bath, deep enough to cover the feet, legs and hips, and pour a stream of *cold* water on the head, back of the neck, and down the spine. This may excite coughing, and enable the patient to throw up the loosened membrane or a part of it. After removing the child from the bath dry thoroughly with a towel, and rub with the hand from the head to the feet, leaving the latter dry and warm. Hand rubbing faithfully applied to the throat, neck and chest, will also give relief.

The life of the patient has sometimes been saved by a severe fit of coughing. I remember a case in which the child by mistake got a strong whiff of ammonia. This produced violent coughing, and the false membrane was thrown off complete. The patient immediately began to improve, and a successful recovery followed.

In some desperate cases, in which it seems impossible to dislodge and remove the false membrane from the larynx, a timely emetic may be of service. Where the child can take it, give a copious draught of warm water, enough to cause vomiting. If emesis is not produced, the warm-water drinking being repeated, it is perhaps a choice of evils to administer a small dose of ipecac. Or you may give powdered alum or ground mustard, this to be followed by warm-water drinking. The effort to vomit sometimes breaks up the membrane, and a good part of it will be expelled.

Should all of the above methods fail, the last resort is a surgical operation. An opening is made into the larynx or trachea and a silver tube introduced, through which the patient can breathe. The success of the operation will depend upon the skill of the surgeon, the age of the child, and the conditions that may be present.—What is termed *intubation* of the larynx, is an operation by which a metallic tube is passed through the mouth into the larynx, for the relief of difficult breathing, which results from laryngeal stenosis. This procedure was first employed by Bouchut of Paris, in 1858. The experiment has been improved upon, and the operation employed in many thousands of cases, both in this country and abroad. It has now taken its place with tracheotomy, as a well recognized surgical procedure in the treatment of obstructive dyspnœa. Wharton states, that the number of recoveries following the operation, is very similar to those following tracheotomy. The same author remarks, that intubation gives better results than tracheotomy, in the first and second years of life; but that after this age, the difference between these operations, so far as recoveries go, is not very marked. It would seem that the more urgent cases are generally reserved for tracheotomy.

#### *False Croup.*

Synonyms.—*Catarrhal Croup; Spasmodic Laryngitis.*

What is termed *false croup*, is an acute catarrhal inflammation of the mucous membrane of the larynx, associated with temporary spasmodic contraction of the glottis. The child has paroxysms of coughing, difficulty of breathing, and may be threatened with suffocation. The attack is often brought on by excesses in eating and drinking. Taking cold is an exciting cause.

After several hours of sleep, the patient wakes with a dry, harsh ringing cough, and seems about to suffocate. In an hour or two (the time may be longer or shorter), the breathing becomes easier and the cough is less croupy; the skin is covered with perspiration, and the patient falls asleep. Next day there is still a cough, but it is loose in character, and the respiration is about normal. The following night the attack is repeated, but the cough is lessened. The paroxysm may even recur on the *third* night, after which the trouble usually disappears. Sometimes however the symptoms persist, and true croup may develop.

The *treatment* required in false croup is exceedingly simple. To relieve the coughing, wring a cloth out of very hot water and apply it to the throat, covering with a single thickness of dry flannel. This can be renewed, or repeated at frequent intervals if there is need. If the child is old enough, drinking a glass or two of hot water will often put an end to the paroxysm. The water may be taken either just before or after applying the hot compress to the throat. The next day give a full warm bath, followed by vigorous hand rubbing from head to foot, leaving the skin in a glow.

To prevent a return of the attack, put the patient on a very strict diet; this should consist mainly of fruits and cereals, the latter being thoroughly cooked. Serve both without sugar, and be careful that the patient does not overeat. In the meantime admit plenty of fresh air into the room night and day, and see that it is not overheated. Take the patient out of doors when the weather will permit; and avoid clothing him too warmly. Bathing in tepid or cool water, say every day or every other day, will tend to increase vital resistance,

and the child will not take cold so easily. The bath should always be followed by thorough hand rubbing.

*Stomach and Intestinal Disorders.*

Derangements of the stomach and bowels are very common, both in children and adults. Often the diet is at fault; either the food is not of the right kind, or too much of it is eaten. I think as a rule, too many *varieties* are indulged in, particularly at a single meal. Until the teeth are pretty well developed the child's diet should consist largely of milk, or simple cereals thoroughly cooked, and served with milk. A great mistake in this country, is in allowing children to sit at the same table with grown people. The case would not be so bad, if the mother would put upon the little one's plate only such food as was best for it. But many parents seem to think that in the matter of eating, children must do as they please. The mother asks the child what it will have; and of course it wants what the rest are eating. A child will eat sour pickles with peppers in them, strong enough to make the tears start, and declare that they are good. The habit of giving sweet things, as jelly and preserves or a piece of cake, is a bad practice; and allowing children to eat between meals, is still worse; when they come to the table they are not hungry. Eating at all hours of the day gives the stomach no rest, the digestion is imperfect, and very soon the teeth begin to decay.

A modern writer has said, that the health of an individual is indicated by the condition of his teeth; when these are decaying, it shows that the digestive function is more or less impaired. Now, if this statement is true, most of our people whether young or old, are on the invalid list. The same author remarks, the

if we were buying a horse or a cow and discovered that its teeth were not sound, we would hesitate to make the purchase, knowing that the animal was sick. In these later years, it has become exceedingly common to see middle aged and even young people with a mouthful of false teeth. A man or a woman in perfect health, will have teeth that are sound or nearly so; and the same is true of children.

Aside from dietetic errors, there are other causes which lead to stomach and intestinal disorders. Too much excitement immediately after a meal will interfere with the digestive process, and predispose to dyspepsia. For at least an hour after eating, the child should either play quietly or lie down and take a nap. If active romping is indulged in, the blood which is needed in the stomach to digest food will be sent to the muscles, and the body will fail to be nourished. Intense *mental* excitement draws the blood to the brain, congests the cerebral vessels, and the digestive organs will suffer. It is a law of physiology, never to disturb or interfere with the individual functions of the body. In taking a bath we divert the blood strongly to the skin; and if the bath comes too near the mealtime, the digestive organs cannot perform their work properly. I have seen a mother take her child straight from the breakfast table and give it a bath. Evidently she did not understand that two leading functions of the vital organism should never be called into action at the same time.

Still another cause of stomach and intestinal troubles, is the habit of dosing the child for every little ailment. Some mothers have yet to learn, that drug poisons and human stomachs very naturally disagree with each other; and that if these chemical preparations are

swallowed from time to time, the mucous membrane of the stomach will be seriously injured. The dosing habit is responsible for much mischief, particularly if it is commenced in early life. The very instincts of the child rebel against the taking of drug medicines. It is because of this instinctive dislike, that drugs are put up in *capsules*. Our instincts were intended as a guide, to protect us from injury; it is the drugging habit that is all wrong.

Just here is a great law, which when properly understood, will do away with the drug medical practice. It is this: The selfsame agents and influences that *preserve health*, are the ones to be employed in curing the sick. For example, we cannot live without air, and the fresher it is the better. Pure air is a leading factor in the true healing art. Pure water is next to indispensable in the preservation of health; and it too is a most important agent in nature's *materia medica*. Pure food and of the right kind, is every way essential to good health. Without it, very little progress can be made in restoring the patient to normal conditions. Other agents that play an important part, whether in health or disease, are the following: The regulation of the temperature of the body; a proper amount of exercise, rest and sleep; an abundance of sunlight; correct influences, mental and emotional, etc., etc. In the study and application of these agents, the physician of the future will have a wide field of activity. Not only so, the products of the pharmacy will be relegated to their legitimate sphere—in science, art, invention, manufacture, etc. When we get back to nature in this matter of curing the sick, the healing art will be very different from what it is at the present time.

The *symptoms* to which disorders of the stomach

and bowels give rise, are about as varied as the causes which produce them. Acids and gases are generated in the stomach and intestinal tract. The patient has a coated tongue, a bad taste in the mouth, and there may be nausea and vomiting. There is heat or burning in the mucous membrane, looseness of the bowels, diarrhœa, constipation; and sometimes there are pile tumors in the rectum. Periodic headaches, loss of appetite, or an abnormal desire for food, are also among the symptoms met with, even in childhood; and cold extremities with rush of blood to the head, are common. In other words, the child in which these conditions prevail, is fast becoming a dyspeptic; and it will not be many years before other abnormal manifestations will develop. When once the ball is set rolling, there is no telling where it will stop.

A common affection among children, is nightmare; or night terrors, which is nearly the same thing. The child wakes suddenly or screams in its sleep. The cause, as a rule, is indigestion; gases are formed in the stomach or bowels, pain is produced, and this gives rise to unpleasant dreams or hallucinations. The little one has eaten something that the stomach could not manage, or it has taken too much food. Sometimes the supper is served late at night; and the child drops off to sleep with its stomach overloaded. Indigestion results, and often an abnormal amount of urine is secreted in consequence; the bladder presses upon adjacent parts, and the sleep is disturbed.

First in the *treatment* for these disorders, is the removal of the causes that have produced them. We must supply those conditions which are essential to good health. If the air is not pure it should be made so, or as nearly as possible. Plenty of sunlight, in the living

rooms and elsewhere, is also important; and there should be sufficient exercise to keep the blood circulating in its vessels, and to build up good muscular tissues. Regularity in the hours of sleep, is specially required for the young. In the matter of diet, a good many things are necessary; the food should be excellent in quality, and suited to the needs of the system. Not too great a variety should be served at a single meal, nor too much food eaten at one time. As the child grows older, let the mother teach it to thoroughly masticate everything it eats. Physiologists are now emphasizing the fact, that where each mouthful of food is *well chewed and insalivated*, not nearly so much of it is needed; they tell us that the quantity may be reduced by at least one-third. Giving meat and other hearty foods to children, is very detrimental to their health. The same is true of sweets, and an excess of starchy foods. As to highly-seasoned dishes, there is no surer way to break down the digestive organs than to use them habitually. Nor is that the worst of it; much seasoning in foods begets an abnormal appetite, and paves the way for strong drink, tobacco, drugs, etc. Many a mother has sent her boy to perdition, by not looking well to the character of the food she provided for him.

When sickness occurs in the family, the mother should use her good common sense; the cause of the illness is probably something that can easily be removed; and by a little care in dieting, bathing, etc., the patient will soon be well. The very last thing to do is to give drug medicines; these do not cure diseases, they multiply them. In the way of treatment, remember that the child's *materia medica* is exceedingly simple. It consists for the most part of just three things; a syringe, a



wet compress, and a correct diet. Usually the first thing needed is to remove the undigested food that is lodged in the stomach or bowels, or in both. If the things that disturb are in the stomach, give a warm-water emetic, filling it as full as possible. Repeat this at intervals until the child begins to vomit; then press on its stomach from below upward, which will favor emesis. After the stomach is emptied, give *hot* water to allay the nausea. This simple treatment timely administered, will save many a child's life.

Where the undigested material, mixed it may be with bile and intestinal juices, is lower down, perhaps in the colon, the free use of the syringe is called for. Sometimes it is necessary to throw up quite a large quantity of water, warm or tepid, letting it remain as long as the patient can hold it. If there is not much pain in the intestinal tract, you may knead the bowels with the hand while the water is retained; this will secure a more thorough evacuation. If however the movement is only partial, let the child rest a while and then repeat the injection. The bowels having been emptied, put the patient in bed with something warm at the feet, and keep food away until the digestive organs have recovered from the extra tax imposed upon them. It is a good plan to begin feeding with a well-cooked gruel, of oatmeal or other cereal; if made of oatmeal it should be strained, to avoid irritation in the mucous membrane.

Should there be a little soreness or abnormal heat, after the upset in the stomach and bowels, apply a warm wet compress over the abdomen, and cover with a single thickness of dry flannel. Remove the compress while it is still moist; then sponge the part with tepid water, dry well with a towel, and rub gently with the hand.

Where the compress is put on at night, it will hardly need to be removed before morning. If the child has slept well and feels refreshed, you may give it a bath, followed by gentle friction with the hand after drying with a towel. Be sure the feet are left warm. Let the patient rest a while, before taking anything to eat; or he may go out into the open air and sunshine if the weather is pleasant.

Be particularly careful about the diet for several days, or until the effects of the attack have passed off. Then see that the causes of the disturbance are not repeated. Where the child has nightmare, either omit the supper altogether or serve it at an early hour; it should be light, both in quantity and quality.

#### *Cramps.*

Cramping in the stomach or bowels, may be produced by almost anything that causes indigestion. Food undigested will produce gases; these may distend the stomach or be confined in the folds of the intestinal tract, and severe pain is the result.

Cramping in the legs is often due to an enlarged liver and spleen, these pressing upon nerves which are distributed to the lower extremities. Or the gases that are given off from undigested food, may press upon adjacent tissues, and give rise to pain, or even cramping.

The *treatment* is essentially the same as for indigestion; remove the cause or causes which produce the cramping, and then treat as in the preceding article.— For enlargement of the liver and spleen, give hot fomentations (see page 413) over them at stated intervals, and endeavor to reduce the organs to normal size. Electricity judiciously applied, will have a similar effect. It must be said however that young children

do not take kindly to electrical currents, nor to applications that are very hot; gentle rubbing with the hand will be more soothing.

Where the cramping is of frequent occurrence, it is often the result of dyspeptic conditions. The body is insufficiently nourished and becomes more or less emaciated, so that the nerves are not well padded with muscular or other tissue; they are too nearly on the outside. The blood too is poor in quality; often it is thick and sluggish, and does not circulate freely in its vessels. When these conditions are present, the indication is to build up the general health; give the child good wholesome food to eat, and let him live out of doors as much as possible, in the open air and sunshine. This will encourage active exercise, keep the circulation in better balance, and the cramps will disappear.

#### *Worms.*

Worms, or intestinal parasites, are generally caused by the things that are taken into the stomach; either the food or the water contains the germs from which they are developed. They are found most frequently among the very poor; the children are badly nourished, and the surroundings are often filthy. The varieties most commonly met with in this country, are of two kinds; the large round worm, and the small thread worm. The first named usually inhabits the coecum and small intestines; it varies in length from six to fourteen inches, is reddish yellow or brown in color, and resembles the common earthworm. In some cases they are exceedingly numerous. The thread worm is about a quarter of an inch in length, and very slender. It is found in the rectum, about the sigmoid flexure of the colon, and sometimes in the coecum and lower end of

the ilium. These worms are often present in groups or masses.

The *causes* of the parasites have already been indicated. Foul or stagnant water usually contains them. They often exist in wells that are located near a privy; also in marshy places where the water is stagnant. The use of celery, lettuce, or other raw vegetables when not carefully washed, may be the means of introducing them into the stomach.

The *symptoms* to which the round worm gives rise, are numerous; there is grinding of the teeth, a fetid breath, itching of the nose, a depraved appetite, colicky pains, irritation about the anus or above it, and the stools are slimy. Often too there is pallor of the face, particularly around the mouth; and where there are many worms in the intestinal tract, the abdomen will be hard and swollen, and the extremities emaciated.

The thread worm produces intolerable itching and irritation about the anus, especially at night. If these parasites are present in great numbers the breath will be offensive, the sleep disturbed, and the appetite more or less abnormal. Picking of the nose is a frequent symptom; and in some cases the child has convulsions.

The best *treatment* is prevention; children that are properly fed during infancy and afterward, are seldom if ever affected with worms. Even when they have found a lodgment in the intestinal tube, a strictly correct dietary if persevered in will generally put an end to them; this is particularly true of the common round worm. But where *thread worms* are securely lodged in and about the sigmoid flexure of the colon, and perhaps in the coecum, it is not always an easy matter to get rid of them. They exist in such numbers, and their slimy beds are so fastened upon the mucous membrane,

that pretty heroic measures are sometimes required in order to eradicate them. There is no doubt that a torpid or constipated state of the bowels, favors their propagation. First of all then, endeavor to secure thorough evacuations from the bowels, and at regular intervals.

Where there are thread worms, the local treatment should be such as will reach the large intestine, and especially the coecum. A few copious enemias of water a little below blood heat, having enough to thoroughly wash out the colon, are highly recommended by some physicians; though others use a solution of castile soap, in the proportion of a drachm to a quart of water. About as much water should be injected as the bowels will hold. Another prescription is to boil a handful of quassia chips in a quart of water, instead of using soap. Warm enemias of salt water every other day for two weeks, is a treatment that is said to be effective. Whatever the injection, it is usually necessary to repeat it several times. Strict attention should be paid to the character of the diet and the water drank, not only during the treatment but afterward.

Where there are round worms, the method commonly resorted to when quick results are desirable, is to destroy them by means of a drug. The prescription is about as follows: Give santonin in doses of one-third of a grain to infants, and half a grain to a grain and a half to adults. This may be taken in capsules or in a syrup, four times in one day; and the last dose is followed in two hours by one of castor oil. Some hygienists rely solely (and with good results) upon a correct dietary.

#### *Itching of the Anus.*

Itching and uneasiness in the anus or rectum, may be caused by the presence of thread worms. Where

these symptoms are present it is best to examine the parts, and see if there are parasites. By introducing the finger just within the rectum, one or more thread worms may adhere to it, and reveal the cause of the itching. If there is still doubt, a small injection of tepid or warm water will now and then bring away quite a number of the parasites, should any exist.

Sometimes however, the itchiness is due to a little abrasion in the mucous membrane of the anus. Constipation with hardened fecal matter in the rectum, not unfrequently gives rise to considerable irritation in the parts. The itching and smarting may be so severe as to keep the patient awake.

The proper *treatment* is, first, to relieve the constipated condition; this is done by dieting correctly, and using full injections of tepid or warm water (see page 420) as needed. If there are worms, treat as in the last article. Where the mucous membrane is more or less abraded, there is often considerable smarting, this being intensified when water, hot or cold, comes in contact with it. An excellent way to relieve the itching, particularly in case of small cracks or abrasions, is to cleanse the part thoroughly with strong castile soapsuds, rinse well, and then protect the mucous membrane with a little olive oil or other unguent. More definitely stated, proceed as follows: Wrap a bit of old handkerchief or other soft linen around the finger, smear with castile soap, dip into hot water and insert into the rectum, cleansing the part thoroughly. If the mucus is not all removed, repeat the process. Then wrap the finger with a clean bit of linen, dip into tepid or warm water, and insert it again to remove the soapsuds. Now oil the finger and insert it, which will stop the itching, protect the mucous surface, and pro-

mote healing. It is a good plan to do this cleansing just before bedtime, first removing any fecal matter that may be in the rectum. Often the parts will heal in twenty-four hours; if they do not, repeat the entire operation.

In using the syringe, one should oil the tip before inserting it. If this is not done, there is danger of producing little abrasions in the rectal mucous membrane, which give rise to smarting. There is less liability to irritation if the bowels are kept free; where they are constipated and there is a good deal of straining, this is apt to produce more or less abrasion of the mucous membrane. In fact, it is in such ways that *fissures* in the anus are sometimes developed. Where the bowels are kept in normal condition, there is no danger of producing fissures.

#### *Convulsions.*

This disease is very common in infancy. Often it is the result of indigestion; gases accumulate in the stomach and bowels, important nerves are pressed upon, and convulsions may follow. They now and then occur in connection with other diseases, as measles, scarlet fever, whooping-cough, etc. Children that are rather nervous, or poorly fed, are more subject to convulsions than those who are well nourished.

The attack may be of short duration, sometimes lasting only a minute or two. In other cases the paroxysm is more severe, and it may continue for an hour or longer. After the convulsion the child usually falls asleep; or it may lie in a stupor, then slowly return to consciousness. In exceptional cases, the stupor that follows the paroxysm may end in death.

The *treatment* will depend upon the causes which

have produced the convulsion. When it is due to indigestion, give a warm-water emetic and make the patient vomit. If the child is so young that it cannot drink warm water, or enough to produce emesis, you may stir a teaspoonful of ground mustard or powdered alum into half a glass of water, and make him drink it. When the stomach is emptied, the paroxysms will generally cease.

Where the convulsion is brought on by constipation, or gas in the bowels, give a full enema of tepid or warm water (see page 420), and produce an evacuation. In some cases the cause of the convulsion is in the head; the cerebral vessels are congested, and the fontanelles prominent or bulging. To afford relief, make cold applications to the head, using ice if need be. Where the patient is feverish, give a sponge bath with tepid or warm water, drying well afterward, and rubbing with the hand. See that the feet are warm; if they are inclined to be chilly, put a bottle of hot water to them. When the convulsion results from a disordered liver, foment that organ from time to time; hand rubbings applied over it are also good.

To prevent a return of the paroxysms, be exceedingly careful in regard to the diet. Fruits and cereals (the latter very thoroughly cooked) should be staples for this class of patients. The cereals, as mushes, may be served with milk; or with fruit juice if the milk disagrees. Avoid foods that are hearty, highly seasoned, or too sweet. Raw ripe fruits, as apples, peaches, etc., are excellent. Fruits that are seedy, as strawberries, raspberries, and the like, are apt to give trouble; it is better to strain out the seeds, and use the pulp or juice with mushes. In the meantime endeavor to build up the general health. See that the living and sleeping



rooms are well ventilated; also take the child out of doors, into the open air and sunshine, whenever the weather will permit.

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### *Chorea.*

Chorea or St. Vitus' dance is a nervous affection, characterized by irregular spasmodic contractions of groups of muscles, with more or less inco-ordination. The limbs are not completely under the control of the will. In some cases the muscles of deglutition and respiration are involved. As to the *causes* of chorea, indigestion and obstinate constipation are prominent factors; the character of the diet is usually at fault. Taking much medicine will also produce the disease. Sometimes a blow or a wound will give rise to it. Secret vice is said to be a cause; also worms in the intestinal tract. The disorder is more likely to occur in the children of parents who use tobacco, and alcoholic liquors. It is oftener seen in girls than boys, and is most frequently met with between the ages of six and fourteen.

The *symptoms* are jerking and twitching of the muscles of the face and limbs, particularly on one side; though after a time nearly all the muscles of the body may be affected. Twitching of the eyes is very common. The patient is generally irritable; and if the conditions are not improved the memory may become impaired, and the mind somewhat obtuse.

The first thing to do in the way of *treatment*, is to thoroughly evacuate the intestinal tract. Give full enemias of tepid or warm water (see page 420), say every day or every other day, until the bowels begin to move of their own accord. Put the patient on a very strict diet; it should consist mainly of fruits and cereals (the latter very thoroughly cooked), these served with little

or no sugar. Raw ripe fruits, especially apples, should be staples for this class of patients; though cooked dried fruits, as apricots, peaches, etc., may also be used. Either avoid the seedy fruits or strain them, using only the pulp or juice. If the patient can masticate them sufficiently, a limited amount of fresh nuts may be eaten with crusty bread or dry toast. Sweets, fine-flour bread, and food that is highly seasoned, must be let alone. Drinking an abundance of pure soft water, this to be taken away from the mealtime, will facilitate a cure.

Keep the skin clean by sufficient bathing, and try in every way to build up the general health. Let the patient have a good airy room on the sunny side of the house, and look to the ventilation night and day. Gentle hand rubbing is excellent in these cases; give it from head to foot, but not long enough to produce exhaustion. Take the child out of doors as much as possible, into the open air and sunshine. The treatment here outlined will cure nearly every patient, and do it in a short time. *Give no drugs.*

#### *Secret Vice.*

Self-pollution or secret vice, is much more common than one would suppose. It prevails, not only among boys and girls of all ages, but to some extent among men and women. The mother should keep a watchful eye over her children; and if signs of the habit are detected, she should take such precautionary measures as will tend to break it up.

The *causes* of secret vice are of two kinds; the pre-disposing and the exciting. The use of stimulants, or of highly seasoned foods, produces an impure state of the blood, and may lead to unnatural excitement in the sexual organs. The habitual use of meat, or other gross articles of food, will have a similar tendency. People

who live largely on flesh foods, made-up dishes, gravies and the like, are more susceptible to sexual influences than those who live simply.

Among the exciting causes are evil associations; one child may contaminate others. In older children, the reading of dime novels and other sensational literature, stimulates the imagination, and often leads to immoral habits. Lack of cleanliness is sometimes an exciting cause; or the presence of thread worms in and about the anus, may set up irritation in the parts adjacent.

The *symptoms* of this vice are usually well marked, and parents should be able to recognize them. One of the first indications is a red flame which starts from the inner angle of the eye, and spreads over the lower lid; it is particularly noticeable on a warm day. Or a sudden redness or flushing of the face may be observed, followed by paleness, and twitching of the muscles about the eyes. Perhaps there is hurried breathing with a deep sigh. If the habit continues it may lead to anæmia; dark lines appear about the eyes, and often the temper is irritable. Indigestion is apt to follow, and the child is not properly nourished.

A symptom frequently present in older children, is an abnormal condition about the sexual organs. In females, the clitoris may be thickened and elongated, and the labia minora are not natural in color. Often there is a leucorrhœal discharge from the vaginal passage, making the linen moist and sticky.—In males the glans is unnaturally red, and protrudes beyond the prepuce; the latter is lax, red and thickened. The watchful mother will make a note of these symptoms, and be on her guard. There are books on this subject, "Hints to Mothers," etc., which every parent ought to read. They give instructions on these points, and also

helpful suggestions as to the management of such cases.

The kind of *treatment* employed will depend upon the conditions that are present, and the causes that have produced them. Usually there is more or less constipation; and one of the first things required, is a thorough evacuation of the intestinal tract. If the bowels do not move freely, give full injections of tepid or warm water (see page 420) as needed. In the meantime look well to the character of the diet; the directions given under chorea, are especially applicable in these cases. Fruits and cereals are staples in the dietary. A child that is properly fed and otherwise cared for, will have better control over his body than one that is pampered or neglected.

Strict attention to cleanliness in local parts, is of the utmost importance; and the frequent use of the sitz bath (see page 384) will help to allay any inflammation that exists. Or you may set the child into a tub of water with legs, feet and hips immersed, wash the parts thoroughly, and dry well with a towel; the water should be as cool as is comfortable to sit in. Attention to general bathing should not be neglected. Let the child have a sufficient amount of exercise to keep it employed, mentally and physically. Idleness is the parent of many vices, even in the very young.

In the adjustment of the clothing, each garment should be rather loose; drawers that are tight or ill fitting, will interfere with the circulation and congest the parts. The clothing should also be equally distributed over the body, so that no part will be overheated, especially the pelvis. Have the child's bed neither too hard nor too soft, and the covering such as will protect sufficiently without overheating. See that the room is not too warm.

## CHAPTER XXI

### HOW TO LIVE A HUNDRED YEARS

Before attempting to discuss this subject would it not be well to ask the question, whether long life is really a thing to be desired. It is a very common idea, even among intelligent people, that old age is necessarily attended with physical infirmities; and that these are so numerous and often so hard to bear, as to render it an affliction rather than a blessing for a man or woman to live to advanced age.

Now, for individuals who take this view of the matter, the following pages will probably be of no special interest. If after we are sixty or thereabouts our weakness and bodily ailments will be such as to make life a burden, we had perhaps better study how to put an end to our existence, rather than how to prolong it. But if it is true, as some maintain, that our physical ills are chiefly of our own making, and that the diseases which creep on in old age can nearly all of them be avoided, then there is another side to this question altogether. The fact is well known, that some people are stronger, healthier and more robust at eighty, than others are at sixty. Why is this? The answer is not hard to find; every physiologist knows that a strict observance of the laws which govern our being, will not only prolong life but tend to ward off

disease; all the more, if the man or woman has inherited a sound constitution. It is through the violation of these laws that we lose our divine inheritance of health and strength, and become the victims of disease-producing agencies.

Not until we or our forefathers have transgressed, do we fall a prey to disease. The wild animals, who live near to nature, rarely suffer from the physical ailments which afflict mankind. Why should we then, with our superior intelligence, spend so much of our time in the sick room, and die prematurely? Cannot we too live in such a way as practically to eliminate disease, fulfill our mission on earth, and end our days with little or no suffering? Under the divine order of things it was never intended that sickness or ill health should overtake us, destroy our usefulness, and cut short our earthly career. But instead of living to a good old age and in the enjoyment of excellent health, we have become a nation of invalids. We have in one way or another, shamefully violated almost every known law of physiology.

More than fifty years ago, in his inaugural address at the opening of Antioch College, Horace Mann, its first President, made the assertion, that it is through gross violation of the laws of health that the period of human life has been cut down to so brief a span, and that our years are harrowed with pain. Diseases like wolves, surround the cradle at the birth of the infant, and turn the breath of human beings into sighs. All animal natures, and even vegetables, thrive, strengthen, and surpass the progenitors of their stock, when subjected to the laws of their being. "Man alone, of all the earth, pales and dwarfs and sickens; begets children, the parti-colored tissue of whose existence is

the woof of one disease woven into the warp of another. He transmits insanity, gout, consumption and scrofula; procreates blindness and deaf muteness, and those human *fungi*, the brainless idiots." These products of polished imbecility are sent to colleges, to be converted into pillars of church and state. Disease marries disease, and blood weds kindred blood. Instead of earning our bread in the sweat of our brows, in the open air and sunshine, we retire from active exercise, live in dwellings which add artificial poisons to natural ones, and then breathe the virulent compound.

We defy, he says, the laws of God in regard to pure air, cleanliness, diet, exercise, and the selection of healthful occupations, and are driving out all manly power and womanly endurance from the race. He also condemns in the strongest language *the use of stimulants*, with which the people "annually madden their brains with two hundred million gallons of intoxicating liquors; and not only stupefy and defile themselves, but transmit irritable nerves and contaminated blood to their children, by the consumption of more than thirty million dollars' worth of tobacco." Of this immense sum squandered for the abominable weed, the members of the church take five million dollars' worth for their share. In the United States, he declares, "much more money is expended for the single article of cigars, than for the common schools of the Union." Thus it is, that appetite triumphs over intellect and morals. For these sins, "posterity suffers through all its organism, and in every endowment. We suffer for the offenses of our progenitors; our descendants will suffer for ours." Horace Mann assures us that while he who indulges in stimulants and narcotics believes that it does him no harm, "three gen-

erations afterward, delirium and gout will shriek out their denial in his great-grandchildren."

Neither life nor health can be maintained, unless we supply those conditions which will develop the body normally, and keep it in good running order. We must have an abundance of fresh air and sunlight; pure water; pure food, and of the right kind; a sufficient amount of exercise, rest and sleep; proper temperature of the body, as secured by clothing, etc.; and correct mental and emotional influences.

Have we done our best to secure these conditions? We shall most likely find that we have been doing just the reverse. Instead of breathing pure air and plenty of it, we shut ourselves up in close rooms day and night, and inhale the excretions of our own bodies; we do this year after year until the lungs are broken down, then die of pulmonary tuberculosis. Moreover, we lead sedentary lives, and take no pains whatever to develop the lungs and other organs of our bodies properly. We deprive ourselves of that wholesome amount of fresh air and sunshine which is absolutely indispensable to good health.

In certain sections of our country whole communities are exposed, often needlessly, to miasms and atmospheric impurities of various kinds. In some of our large cities, there is enough filth in the back alleys, and in swill-pails and garbage boxes, not to say ill-kept stables, to pollute the atmosphere for squares around. A single family, careless in its habits, can generate filth enough to keep themselves and their neighbors sick, with diphtheria, malignant sore throats, etc., especially in winter when the houses are shut up, and the inmates scarcely venture out into the open air and sunshine. In country places, where one would expect the air to be



especially pure, privies in the back yard, open sewers, and unsanitary conditions generally, are often enough of themselves to create epidemics of measles, scarlet fever, and other contagious diseases. For whatever the *specific germ* may be in any one of these affections, the fact remains, that an unhealthful environment will make the individual more susceptible to disease-producing agencies. Moreover, where the sanitary conditions are bad, this not only favors the propagation of bacteria, but it may give rise to them. Where are the health boards, that they do not look after these things?

Very little attention is paid by the average household, to keeping the atmosphere pure, either in the private dwellings or outside of them. Sometimes too the male members of the family still further deteriorate its quality, by filling the air with tobacco smoke. It is needless to say, that not one of the impurities here spoken of, has any right to exist. Even the privy in the back yard should not only be emptied at stated intervals, keeping the premises sweet and clean, but a sufficient amount of dry earth should be used to cover the excreta from day to day. There are plenty of ways to render the conditions sanitary, if we but take the pains to find them out.

As to sunlight, an almost criminal indifference is shown, even by intelligent people, in regard to securing the proper amount of it. One would suppose that sunlight was an *enemy* to mankind, and that the less we had of it the better. Indeed, the very first principles of good health are ignored. Plant life, as we know, is largely dependent upon sunlight; and the same rule holds good in respect to animals, the human race not excluded. If our lives are spent in the shadow, in dark rooms and basements, or where the sun's rays

seldom or never enter, we shall grow pale and sickly, and the general health will suffer; the blood recedes from the surface of the body, the capillary circulation is obstructed, and the internal organs become more or less congested.

In our latitude, there are certain seasons of the year in which living and working indoors can hardly be avoided. During the cold winter months, it is often next to impossible to spend a great deal of time in the open air; either it is too cold and disagreeable to face the north winds, or it is wet and sloppy under foot. Still, if we were very much in earnest about the matter, ways and means could be devised for living out of doors a great deal more than we do. We would take advantage of the warmer part of the day, and the fine weather, and manage to get out into the open, rather than house up so closely.

It is the *exclusion* of pure air day and night, from the homes, schools, churches and offices, from public and private conveyances—every place indeed where human beings are found, that helps to make disease run riot in our land. The conditions are unsanitary, and good health is out of the question. If the impurities could be shown in the *color of the atmosphere*, some of our most luxurious homes would be very dark. Again we ask, where are the health boards; and why are they not on duty? Are they themselves steeped in the fumes of tobacco; or indulging in stimulants when occasion offers? Much effort is being made to prevent the spread of contagious diseases; but the one essential thing is lost sight of. Pulmonary tuberculosis is caused *almost solely* by the breathing of impure air, especially at night. And yet, very little is said, even by physi-

cians, in regard to the importance of thorough ventilation.

Another thing highly essential to health and longevity, is an abundant supply of pure soft water. When the water we drink is filled with impurities, or with substances that cannot be utilized in the vital economy, they become deposited in the various organs and tissues of the body, and cause disease. Gout, rheumatism, goiter, and other chronic ailments, often result from the use of water which contains crude materials, as limestone, magnesia, etc. Or it may be impregnated with *organic* impurities, and give rise to typhoid and other putrid fevers. But these objectionable substances can be eliminated; and if we deemed it as important to provide ourselves with pure water as to have fine clothes to wear or a comfortable house to live in, we would take the necessary steps to secure it. The expense would be small, compared with that incurred through the loss of health.

As a general thing, the presence of *organic* substances in water is due to neglect, or bad management; if there are sources of such impurity in the vicinity of the water supply, they should be removed. Where a well or cistern is located near a barnyard or stable, or only a few feet from a vault or privy, it is the easiest thing possible for foul matters to gain access to the water used for drinking and cooking, and an epidemic of typhoid fever may be the result. A *cemetery* on the hill, or even in a neighboring valley, may be a source of impurity in water, and produce disease. Strict sanitary regulations will do away with all this, and keep the water supplies pure.

Perhaps few things have done more to shorten human life, than the *incorrect* dietetic habits of our people. We

do not eat to live, but to gratify appetite; and the latter has become so perverted, that it is no longer a guide as to what is best for us. In the first place, people as a rule eat more food than the system requires; this leads to a surfeit which makes the blood impure, and lays the foundation for disease. It has been truly said, that a very large per cent. of the ills which afflict mankind, are due to erroneous habits in eating and drinking. Both acute and chronic diseases are often directly traceable to this cause. Abnormal growths, some of them malignant, are also of frequent occurrence. Cancer, according to reliable statistics, is constantly on the increase especially among civilized people; though a great deal of doubt exists as to the cause of the malady. We seem to forget, that the only thing which can render us immune from cancer or any other disease, is to *keep the blood pure*.

But what constitutes the blood? It is made from the food we eat, and the water we drink. How important then, that these should be kept free from contamination of every kind. Have we taken the necessary precautions in this respect? Far from it; adulteration of foods is exceedingly common. Poisons of various kinds, are used for preserving meats and vegetables; moreover, things that are canned in tin, particularly fruits, are often poisoned by the oxides and salts of the metals that are apt to form; and if the goods are not of recent putting up, the danger is all the greater. As to fish, flesh or fowl, a large per cent. of that put into cans is very inferior in quality; and some of it is actually diseased. The extensive use of canned goods, is thought by many to be a factor in the development of cancer. The theory is, that the oxide of tin and other metallic poisons often found in them obstruct the

circulation, especially in the finer capillaries, and form a nidus or bed for the lodgment of impurities, which may give rise to cancer or other abnormal growths.

What is known as Bright's disease, carries off about 35,000 of our people every year. It has been termed, "the malady of civilization"; and a noted medical authority says, that it is beyond everything else a disease of civilized white men; that it is "due almost entirely to those habits of life which distinguish the white man from the savage of the jungle." This writer remarks, that nine times out of ten, it is the result of disorders of the digestive tract, these being due to "too much eating and drinking, too much bending over desks, and too little fresh air." The savage knows nothing of whiskey, and gets plenty of exercise and sleep; consequently he has good digestion, a clear eye, and good red blood in his veins. But the civilized man eats rich food, "made appetizing by stimulating condiments, braces himself with alcohol, lives in stuffy houses in filthy smoky cities, and never walks when he can ride." By and by his stomach fails in its duties, his kidneys break down, and he dies of Bright's disease. This is said to kill more millionaires than any other single malady. The excessive use of animal foods, particularly meats, is a prominent etiological factor in this disorder; the same is true of seasonings and condiments, and all stimulating substances.

Not only do we fall a prey to disease in middle life but the young are far from healthy and robust. In a report given by C. C. Burlingham, chairman of the committee that is looking into the condition of school children in all our large cities, it is stated that 12,000,000 boys and girls are behind their proper grades, because of physical defects that could be avoided.

Neither the food that children eat, nor the general sanitary conditions, in the schoolroom or out of it, are such as to promote good sound health. The mothers too are greatly at fault; in the selection and preparation of food, they have departed from the simpler dietetic habits of earlier times. The products of the soil, as grains, fruits and vegetables, are so tampered with before they reach the table and afterward, that they cease to be wholesome. Even our sanitariums, some of them at least, are laying themselves out to make certain dishes "appetizing." Just as if nine-tenths of us, and especially those who are under medical treatment, were not already inclined to eat too much, simply because the food tastes good. Better devise ways and means to *check* the average appetite; to restore it to normal conditions, so that it will be a guide, not only as to the quality of the food eaten, but the quantity that the system requires.

The average cook-book is a collection of recipes, many of which give directions how to *spoil* foods, rather than to prepare them in ways that are conducive to health. The very names applied to some of these food preparations, are unintelligible to people of simple habits; they are vile concoctions, which will ruin the best stomach that ever was created. Our children become dyspeptic at an early age, and are very soon in need of a doctor. They are medicated and dosed, year after year; and by the time they are fully grown, the digestive organs are seriously impaired. In persons who have reached middle life, both the stomach and intestinal tract are often the seats of disease, malignant or otherwise. Acute and chronic attacks of appendicitis, ulceration of the stomach and bowels, abscess in the rectum, pile tumors, etc., etc., are of everyday occur-

rence. A sound stomach or a healthy intestinal tube, is the exception; and "aids to digestion" are in almost constant demand.

Suppose we look into the pantries and storerooms of the ordinary housewife; what shall we find there? Not plain canned fruits, moderately sweetened; but pickles and preserves, jellies and jams, catsups, sauces, etc., that are intended to stimulate lagging appetites, and serve as relishes for other foods. Were the digestive organs in a normal state, this class of "appetizers" would not be needed. Natural hunger is the best sauce; and daily exercise in the open air and sunshine would produce normal waste of tissue, and make a demand for food. One who sits down at the table when he is not hungry, would do better to fast a few hours before attempting to eat; the system is already surfeited, and food taken under such conditions will not only impose needless work upon the digestive organs, but overtax the skin, liver, kidneys and other depurators, in trying to get rid of the surplus.

We look at the Japanese, and wonder how it is that they are so strong and muscular. They are fine specimens of physical vigor; and the secret of their hardihood and endurance lies mainly in the fact that they *eat simply*. If our people would adopt a similar regimen, their bodily conditions would be greatly improved. On the Japanese tables will not be found pickled pigs' feet, sauer kraut, hot sauces, nor any of those "five hundred" made-up dishes which are so highly prized by the Americans. The excessive use of stimulants and condiments, and seasonings of every kind, is undermining the constitutions, even of the young, and rendering us a nation of invalids. It is this indulgence, in the private home and elsewhere, which

leads our young men to the *use of tobacco*, and *strong drink*. Will the mothers take warning; or will they go recklessly forward, as they have been doing for the last fifty years? [libtool.com.cn](http://libtool.com.cn)

Not only is the quality of the food itself of prime importance in maintaining health, but the conditions under which it is eaten should also be correct. The most wholesome viands in the world can neither be digested nor assimilated, if we persist in eating when we are not hungry, when the nervous system is greatly disturbed, or when other conditions are present that will interfere with the nutritive process. Suppose we come to the table in great haste, the blood rushing to the head, and the circulation unbalanced. We swallow our food in large mouthfuls, imperfectly masticated and insalivated, expecting the stomach to do the rest. Then we rush off to business, and plunge into work again. Life at such a pace, will not be conducive to longevity; the grave will claim us before our time.

The fact that many of our citizens, even in middle life and before, are dropping over with apoplexy, ought to be a hint broad enough to bring us to our senses. Too much food is eaten, and it is of a kind that begets an inflammatory state of the blood; the vessels themselves become diseased, and the heart cannot do its work normally. Cerebral lesions follow, and life is imperiled. We need a gospel of health, as well as of morals; something to lead us back to nature, and to correct habits of living.

Very much has been said and written about *microbes*, which under certain conditions, are disease-producing; and efforts have been made to discover a serum or other preparation, which if introduced into the system would kill them. The fact seems to have been overlooked, that



a foul or impure state of the blood, as from bad eating, or breathing a vitiated atmosphere, will favor the development of these germs, and the most fatal diseases may be produced. It is well known however that microbes, even of dangerous quality, are not much to be feared if they are limited in number; it is when they multiply rapidly (as in foul blood) that life is threatened. Where the blood is kept pure and wholesome, because of good habits in eating and drinking, the breathing of pure air, etc., the disease-producing bacteria cannot be propagated; and if any find their way into the system they will be destroyed.

Certain modern pathologists are taking just this view of the case; and are bringing out what they term The New Hygiene, which, briefly told, consists in making the blood so pure, that any disease-producing microbe will be readily "captured" and destroyed. It has been found that, owing to a pure state of the blood, there is developed in it what are termed *opsonins*; and by the aid of these newly-discovered bodies, the white blood-cells can defend the system against those bacteria which attack the citadel of life.—But what if the blood is already saturated with the nicotine of tobacco, or with alcohol, or any other substance which renders it impure? In such a soil microbes dangerous to life and health will flourish and propagate. The individual who uses beer habitually, will render his blood so impure that a broken limb will scarcely heal. It is only by keeping the blood in a high state of purity, that vital resistance is able to ward off disease; the *vis conservatrix naturae* is then at its best, and we are in little or no danger from death-dealing agencies. In the language of a modern writer, "We shall never be able to cleanse the earth from bacteria, but we may learn to

live so close to nature, that germs will cease to be a terror to us."

A very common way in which we transgress the laws of health, is in taking too little exercise. Our lives are so strenuous, we are so deeply absorbed in money-getting and money-spending, that the needs of the body are lost sight of. To keep it in good working order, a certain waste of tissue should take place regularly. It is partly through lack of this that the appetite becomes impaired; we eat when we are not hungry, and lay the foundation for disease. Exercise to be of the greatest value, should be taken at stated intervals; it should also be commenced in very early life. Whether for children or adults, it should be so regulated as to bring every organ and muscle into full play, and thus develop the body as a whole *symmetrically*; building up muscle in spots, is not the thing needed. The rule should rather be, to strengthen the parts that are weak, and see that no portion of the body is neglected. Whatever the form of exercise, it should neither be too severe nor continued too long; the object sought is to strengthen, build up, not to weaken or deplete. The best time for physical exercise, is either in the early morning or mid-forenoon; the atmosphere is full of ozone, and there is less impurity in it than during the later hours of the day. Moreover, if we would get the finest results, the exercise should be taken out of doors; this will give the individual the benefit of fresh air and sunshine.

Not only in childhood and youth is active exercise of the first importance, but after the individual has reached maturity the systematic training of the muscles and limbs should be continued. One way of doing this, is by selecting a suitable occupation; another is by

making proper use of the gymnasium, to which every one who needs it should have access. Nor must it for one moment be forgotten, that the advantages of judicious physical training are not limited to either sex; both boys and girls should receive the benefits of whatever there is to gain from well-ordered exercises. But to accomplish the thing desired, either in the gymnasium or out of it, the garments which cover the body should be so made and adjusted as not in the least to interfere with the action of the muscles or limbs; they should allow about the same freedom as if no clothes were worn. Until we grasp this truth in its entirety, we shall never be able to take either the right kind, or the proper amount of exercise.

Whatever the calling or occupation in life, there is one form of exercise which nearly every one can take, and that is *walking*. This properly done brings into play nearly all the muscles of the body, and is highly conducive to health. But the trouble in our country and especially in cities, is, that we prefer to ride; we step into a street car, or take a carriage, even to go short distances. This is one reason why there are so many fat people; good strong muscle is not made, the blood does not half circulate, and there is very little waste of tissue. Did it ever occur to the reader, that the majority of the individuals who drop over with apoplexy are not muscular, but *obese*. Even our young people are showing the same tendency; the system is continually surfeited, both by overeating and too little exercise, the blood rushes to the head, and apoplectic conditions result.

Men and women who are absorbed in business, and in the various pursuits of life, are prone to neglect the physical; they fall into a certain routine, keeping this

up day after day, and exercise for its own sake is never thought of. The same thing is true in regard to rest and sleep; the work in hand is pressing, and everything else has to give way before it. Too often, night is turned into day; and the early morning hours when all nature is inviting, are spent in trying to make up for sleep that has been lost. Children, who require more sleep than adults, are sometimes kept out of bed until late at night; and often they are up too early in the morning, the house being all astir. Parents should make it a point, not only to send the little ones quietly to bed at an early hour, but to see that they are not disturbed until they wake of their own accord. In many families however the children have late suppers, and when they ought to retire they are wide awake.\* To make children strong and well, and keep them so, nothing should be allowed to interfere with their growth and development, nor with their rest and sleep.

In the matter of *dress*, most people in civilized countries ignore the laws of physiology. This is particularly true of women; the way in which they robe themselves, is a sad commentary upon their good sense and judgment. It has often been remarked, that few men would be willing to exchange their free and easy garments for those worn by women, even for twenty-four hours, on account of the physical discomfort to which it would subject them. A woman's clothing as at present worn, is neither comfortable, convenient, nor healthful; it makes undue pressure on certain portions of the body, cripples the breathing power, and interferes with muscular action. It also impedes locomotion, throws the body out of normal position, and renders free use of the muscles and limbs impossible. Still worse, it tends to unbalance the circulation, congest

local parts, and give rise to inflammations in the pelvis and elsewhere; which is another way of saying that it is *disease-producing*[libtool.com.cn](http://libtool.com.cn)

Let us hope however that in these days of advanced thought, when women are beginning to take an active part in science, art, literature, and in almost everything that pertains to the uplifting of humanity, they will see the folly of devoting so much of their time to frivolous occupations, fashionable adornment, and other things that divert the attention from the nobler purposes of life. The clothes we wear should in no way interfere with the normal functions of either body or mind. Neither should they in the slightest degree produce physical discomfort, nor predispose to disease. Many of the uterine and other affections from which women suffer, are the direct results of congestion, due to an unphysiological mode of dress. The garments are wrong in construction, and also in their arrangement about the body.

The dress of most women is not only too snug, but too longwaisted; moreover, the use of belts and strings, and other paraphernalia, causes pressure upon soft abdominal walls, and forces important organs out of normal position; this produces uterine and other displacements, and leads directly to disease of the pelvic organs and viscera. Young girls (the future mothers of the race) perch themselves upon high heels which throw the body forward, displacing the center of gravity, and producing curvature of the spine. The shoes are laced too snugly about the ankles, thus interfering with the circulation, and making the feet cold. Often they are entirely too small, perhaps ill fitting, and the toes are turned out of their normal position. There is scarcely one woman in twenty, whose feet are not

deformed in this way; hence the development of painful bunions, corns, and ingrowing toe nails, and the inability to enjoy needful exercise.

There is indeed not much help in sight for women, either as to health or usefulness, until these things are corrected. Women can never take their places in the world's work, until they are restored to their own physically. They have been called the "weaker vessels"; not because they are naturally wanting in physical endurance, but because they have set at defiance the first principles of physiology, particularly in the matter of dress. In doing this, they have not only dragged themselves down, but the whole race as well. The diseases from which they suffer, curse the infant before it is born; and our girls as they grow up, are not at all fitted to become wives and mothers.

An ideal dress, whether for men or women, must subserve the interests for which it was intended. First of all, it should cover the body evenly; this will help to keep the circulation in good balance, avoid overheating in local parts, and prevent congestions; it will also protect the extremities, and keep them warm. The garments worn, whether for utility or ornament, should be so adjusted as to allow perfect freedom of action in every limb and muscle; there should be no restrictions, either about the waist line, the throat, or anywhere else. If women have talent, discrimination, and a proper sense of the fitness of things, let them show it in devising a wardrobe which shall neither interfere with their usefulness in life, nor beget disease. Let the *thinking* women of our own and other countries take hold of this subject, and help to restore the sex to that wholesome degree of vigor which should be its natural inheritance. If it is true that "women rule the world,"

they should wield the scepter for the good of the race, and not for its destruction.

So much, for the duties which devolve upon women. It must be said however, that the *fathers* have or ought to have a great deal to do with the general integrity and vigor of the race. If their habits are correct, in diet, dress, and everything else, a higher grade of mental and physical endowment will be handed down to posterity. But how is it, even among the most civilized and enlightened nations? Are the men as a rule fine examples, either of physical vigor or moral excellence? About every third man you meet, is the slave of the tobacco habit; and not a few are given to the use of intoxicants. What is more, a very large per cent. of the men who are called respectable, are by no means free from the taint of immorality. In their youth (perhaps indeed later in life), they have not only violated the seventh commandment, but greatly impaired their physical vigor. Many of these individuals enter the marriage relation, and the effects of their transgressions are visited upon their offspring. We have not yet reached that stage of advanced civilization in which the moral lepers of our race, whether male or female, shall be barred from matrimony, and the propagation of their kind.

Another feature of this subject, one that is scarcely touched upon except by a few leading physicians, is that marriage with all its duties and obligations, does not restrain men from sexual *excesses*; they waste vital force, impair the nervous system and reduce physical vigor, by giving way to their animal passions and propensities. Their wives too suffer, and become nervous wrecks, because of these transgressions. The race is drifting, drifting; and the perfect development of either

mind or body, so far as healthful and moral influences are concerned, is left to take care of itself. Some very radical changes will have to be made, before we can hope for perfect health, or make long life desirable.

There are indeed many causes at work, which tend to make us physically inferior and shorten our days. In this age of rush and hurry, and in the mad desire to get ahead, we are seriously overtaxing the *nervous system*. That great nerve center, the brain, is continually overworked; the cerebral vessels are congested, the head is hot, and often the extremities are cold. The tremendous strain under which we labor, has little or no remission. The hours of rest and sleep are encroached upon, and we rise from our beds unrefreshed. Physicians who have been studying this subject, declare that diseases which affect the nervous system are much more numerous than formerly, and also more intense. Not only so, they tell us that the causes which have produced them are largely of our own making. We indulge in bad habits in eating and drinking; we neglect to take proper exercise; we live too much indoors and in a vitiated atmosphere. Too many hours are devoted to business, and not enough to recreation, rest and sleep. Everything is done in a hurry; the nerves are kept on high tension, and sooner or later they are unable to perform their functions properly.

As a nation, we have developed what is termed, *the nervous diathesis*; and not merely individuals, but whole classes of people are in need of the specialist. The institutions already established for the treatment of nervous affections, are inadequate; they cannot accommodate the number of applicants for admission. Surely it is time to call a halt, and endeavor to improve matters.



To secure good health and maintain it, THREE THINGS are necessary. The body as a whole should be well developed; each organ should perform its function without interfering with that of any other; and the mind itself should act normally. But in our rapidly developing country, we go to *extremes*; we do not give to each and all the functions, either of body or mind, that careful thought and consideration to which they are entitled. Some of us are living for the gratification of appetite; others are giving their attention to fashionable attire, social functions, and superficial attainments. Many are absorbed in intellectual pursuits, paying little heed to anything outside; and still others are devoting their entire time and energies to the acquisition of wealth. The mistake made by each and every one of the classes here named, is that too much attention is paid to one thing, while others are neglected. It is *change* of occupation, that keeps the vital machinery in good balance. When we give to the various functions of mind and body the care which they deserve, there will be no breaking down of individual members.

The history of civilization in modern times, is not in the highest degree complimentary to our so-called advancement. On the contrary, the records show gross violations in matters pertaining to health. People have deteriorated physically; lost their power of vital resistance; and the result is that diseases have multiplied, and the term of life has been shortened—many fold indeed, if the Hebrew statements are correct. Now we are asking with some degree of seriousness, not how we shall attain the age of nine hundred and sixty-nine years, as did Methuselah, but whether we can even round out the period of a single century. A doubt too

has been expressed, as to whether it is possible under any conditions, to greatly prolong human life. It remains for physiologists to point out the ways in which our bodily infirmities can be gotten rid of, and the period of our earthly existence extended.

Shall we not in the twentieth century, make such progress that physical ailments will be practically unknown? At the present time, the signs of disease are everywhere apparent; the color of the skin, the dull or inflamed eye, the imperfect sight and hearing, the decayed teeth, the bald scalp,—all these tell of diseased conditions. Where the dietetic and other habits are correct the eyes will be clear, the skin smooth and ruddy; and the pure blood that courses in the veins will render the individual proof against morbid agents and influences. It is greatly to our discredit, that so many of our people, even in youth, bear the marks of premature decay. When health and hygiene prevail, these evidences of physical degeneration will disappear.

How to live a hundred years, may be summed up in two words—DO RIGHT. We must breathe pure air night and day, filling the lungs and expanding the chest at every inspiration; eat the right kinds of food, and under proper conditions; drink pure soft water, and plenty of it; take a sufficient amount of exercise, rest and sleep; carefully regulate the mental and emotional influences; and keep the bodily functions in as *good balance* as possible. Moreover, all this must be done in such way as to *conserve vital force*. In other words, we must understand the laws which govern life and health, and obey them.

We are at this very time, spending vast sums of money for that which profits us little; things that are positively hurtful in fact; and *neglecting* others that

are of the utmost importance to our well being. We pay out millions of dollars every year, for tobacco, alcohol, and other substances that are detrimental to health. Not only so, hundreds of thousands of dollars are invested in the manufacture of drug poisons—things that are anti-vital and health-destroying. But not *one cent* has been given for the founding of a college in which the principles and practice of hygieo-therapy are taught.

There are however forces at work, which in the not distant future will so change public sentiment, that the present order of things will be reversed. We will not only place within the reach of every individual those agents and influences which promote health, but we will make it binding upon each member of the community to use them properly.

Despite the indifference shown by the masses of our people in regard to the laws of life, there are many thinkers and writers who are trying to point out the dangers which follow disobedience, and to teach us how to avoid them. Among the great number of books written by individuals of this class, are the following: Physical Education, by Felix L. Oswald; the same subject, by D. A. Sargent; The Natural Cure of Consumption, C. E. Page; How Should We Breathe?, G. H. Patchen; Deep Breathing, M. L. Holbrook; The Avoidable Causes of Disease, John Ellis; Natural Method of Healing, F. E. Bilz; Fruit and Bread, Gustav Schlickeysen; The A. B. Z. of Our Own Nutrition, Horace Fletcher; The Aristocracy of Health, Mary Foote Henderson; The True Science of Living, E. H. Dewey; New Era for Women—Health Without Drugs. the same author; The Art of Living, Ellen Goodell Smith; Health by Exercise, G. H. Taylor; Health for

Women, the same author; True Manhood, Mrs. E. R. Shepherd; Health, Strength and Power, D. A. Sargent; Physical Education by Muscular Exercise, L. H. Gulick. [www.libtool.com.cn](http://www.libtool.com.cn)

The authors here named, have not told us *all* there is to learn about health. But he who reads with a view to finding out the secret of long life, health and happiness, will be greatly benefited by a perusal of these books. Every one who is seeking for better physical conditions, would do well to read *The Art of Living Long*, by Louis Cornaro. Beginning at the bottom of the ladder, he recovered health when it was lost, and attained to the age of one hundred years.

The works of Dr. T. L. Nichols, an author and physician well known in this and other lands, are among the best in hygienic literature. He has recently closed a long and most active life. Being a man of the simplest habits, he was a stranger to ill health; and almost to the time of his death, he was sending his books and papers to the four corners of the earth. One of his earlier works was *Esoteric Anthropology*, published both in this country and abroad. It was he who wrote *How to Live on Sixpence a Day*; and any one who saw Dr. Nichols would know that he lived well. Even after seventy, he carried the bloom of youth in his face, and the evidences of vigor in his whole physique. Many years ago he established the vegetarian restaurants in London. When not writing, editing, lecturing, etc., he was inventing foods, baths, etc., and doing all in his power to promote health and sanitary reform. Among his latest and best works is a small volume entitled *The Diet Cure*, which should be read by everybody.

There are indeed many writers, who have pointed

out the road to health and happiness; and by reading their books we shall learn much that is of value. If one is really interested in getting the greatest good out of life, he must study the subject as carefully as he would a very important business proposition. The best results are not obtained without earnest endeavor; it is because we have not cared to understand the laws of life and health, that we continue to transgress them and are suffering the consequences. Will not the next generation and those who are to follow, take hold of this subject, and demonstrate to the world what can be done, not only to lengthen human life, but to make it better worth living?

It is one thing to show ourselves vanquished in the great battle of human existence. It is quite another, to prove that we have placed every faculty of the mind, and every function of the body, under law; that we have *conquered* those material forces by which we are surrounded, and made them serve us in the full development of our mental and physical powers.

The rules for securing long life and happiness are exceedingly simple.

1. Put nothing into the blood that will contaminate it. The food we eat, the water we drink, and the air we breathe, should be free from impurity. This will give us good materials out of which to make sound tissues.

2. Exercise enough daily in the open air and sunshine, to stimulate the depurators to normal activity. This will insure deep breathing, thus enabling the lungs to take in plenty of oxygen, and the tissues to throw off the débris that would otherwise accumulate from day to day.

3. Regularity in all our habits, exercise, rest, sleep,

bathing, etc., will secure the normal play of all the functions, and tend to develop the body symmetrically.

4. Cultivate at all times a hopeful and cheerful disposition, spend more time in finding out the good there is in people, than in criticising their faults. If we look and work for the most desirable things, we shall find them.

## APPENDIX

### WATER AS A THERAPEUTIC AGENT

As far back as medical history gives us any record, water has been variously employed in treating the sick. No other agent fulfills so many indications, and does its work so satisfactorily. It may be used to warm, to cool, to balance the circulation, or to quiet aching nerves. In a raging fever it will reduce the heat; and in a low fever with feeble vitality, it determines action to the surface, and relieves congestion in local parts. It is the best *solvent* known. Through the medium of the blood, it can be carried to every organ and tissue; and by diluting impurities, it helps to convey them into the general circulation. It promotes excretion in all parts of the body, and aids the depurators in the expulsion of waste matter from the system.

Both in acute and chronic diseases, water is a valuable therapeutic agent; and every hygienist is supposed to be familiar with the different ways of applying it, and to know how to use it to the best advantage.

#### PRACTICAL HINTS FOR BATHING.

1. Do not bathe when chilly, very tired or mentally excited, and never too near the meal time.
2. Let the bath be taken at least half an hour before eating, or from two to three hours after a meal. This rule applies especially to the full bath, wet-sheet pack,

pour bath, steam bath, and all forms of treatment that would cause general determination of blood to the surface. It also applies to the towel or sponge bath. In some of the lighter forms of water treatment, as foot baths, local compresses, etc., less time after eating is required.

3. Generally speaking, the best time for a bath is either on rising, or half way between breakfast and dinner. For invalids and those who are not strong, there should be an assistant.

4. Avoid chilling the stomach with large draughts of cold water before bathing.

5. The bath should always be taken in a room that is comfortably warm; say 65° to 70° F. for persons in good health, and from 5° to 10° higher for invalids. If the room is scarcely warm enough take the bath quickly, rub briskly afterward, and have the water not too cold.

6. In preparing a bath, use a thermometer to regulate its temperature. When there is none at hand, the elbow is not a bad substitute; if the water is too cold, it will feel chilly.

7. The temperature of the bath should be such as will secure the best reaction. For feeble people, the water should be warm or tepid; but those who are strong and vigorous, may react well after a cold bath. It should never be so cold that fatiguing exercise is necessary, in order to induce reaction.

8. A good rule is to wet the head before taking a bath; and another that is imperative, is never to continue a bath or other form of water treatment, if its effect is disagreeable to the patient.

9. Just before coming out of a bath, it is better to reduce its temperature somewhat; this will give a



stronger reaction, and there is less danger of taking cold.

10. After bathing, dry well with a coarse towel; or a soft cotton or linen sheet may be thrown over the patient, and used instead of towels. Then follow with brisk hand rubbing, from head to foot. Finish with light percussions, commencing at the head and ending with the feet, and leaving the skin in a glow.

11. See that the feet are carefully dried, and perfectly warm. Leave no moisture between the toes, and avoid putting on cold shoes; these and the stockings should be left in a warm place while taking the bath.

12. If feeble, lie down and rest, the bed being comfortably warm; a bag of hot water may be put to the feet.

13. Do not sit in a draft after bathing; and never take a bath when the feet are cold. If they become chilly afterward, apply something warm to them. Either that, or pull on warm stockings, and have an assistant rub the feet until there is a good reaction.

14. Where one is strong enough, the bath may be followed by some kind of exercise, taken either before putting on the clothes or afterward. The exercise should not be too vigorous, or too long continued.

15. There is no objection to taking a towel or full bath when perspiring freely, provided one is reasonably strong and not fatigued. The skin is more easily cleansed when it is moist from perspiration.

16. Treatment that is heroic, should never be given to feeble patients. As a rule, they cannot take the wet-sheet pack. Neither do they react well after very hot or very cold baths; and the full bath if prescribed, should be quickly administered.

17. If a cool or cold bath is taken, it should be of short duration; one or two minutes is generally long

enough. In fevers however, where the heat of the body is above the normal, the length of time to remain in the bath must be determined by the amount of surface heat, and other conditions that are present.

18. In cases of great prostration, debility, or severe local congestions with determination of blood to particular parts, no heroic treatment should be administered. Very hot or very cold baths must be avoided; also plunge baths, cold showers, cold douches, etc., which would disturb the circulation and increase the congestion.

19. For one who is sick in bed, a towel or sponge bath is often best. If there is great weakness, bathe a small portion of the body and let the patient rest awhile. Then bathe another portion; the time required for completing the bath, will depend on the strength of the patient.

20. Persons who are not strong, react best when the water is neither very hot nor very cold. The temperature of the bath may range from 94° to 98° F.; if much above or below this, the vitality will be wasted. Patients are more inclined to take the bath too warm than too cold; hence the direction that is sometimes given, to have the water just cool enough not to feel chilly.

21. Very hot or very cold baths, either for sick or well people, are seldom needed; though the temperature will vary several degrees, for different individuals.

22. Well persons ought to bathe at least twice a week; and if reasonably strong, three times would be better. Not every individual can bathe daily, especially if the vitality is feeble.

23. The time to remain in a tepid or warm bath, is

generally from seven to ten minutes. This is for persons in usual health.

24. During menstruation avoid much bathing; if necessary, sponge a part of the body at a time. Foot baths can also be taken; or a local wash for cleanliness, using tepid water. Neither the full bath nor the wet-sheet pack should be employed at the menstrual period, unless there is special need. If there is pain at this time, it can often be relieved by a hot sitz or foot bath, or the two combined.

25. The length of time to remain in a bath, will vary according to physical conditions. If quite feeble, one should stay in the water but a short time, say not longer than from five to ten minutes; and a light spray or quick pour is often better than a tub bath; it secures more prompt reaction.

26. If during a bath any unpleasant symptoms appear, it should be discontinued. In a hot bath the patient sometimes feels like fainting; though this rarely occurs where the ventilation is good. When there is faintness give sips of cool water to drink, wet the head and face, and place the patient in a horizontal or reclining position; also cover well, and let in fresh air.

27. After a bath, the room should be thoroughly ventilated; not by opening the door into another room or hall, which would send foul air through the house, but by means of a window or windows communicating with the fresh air outside. In case of invalids, this should be done by the assistant.

28. Pure soft water is the best for bathing purposes. Mineral waters are harsh to the skin; and the foreign ingredients in them are of no benefit whatever.

29. Where there is a gross condition of the system and the skin inclines to be sticky, sea bathing is often

recommended. The water of the ocean is cleansing; though a handful of salt dissolved in the bath, will do just as well. Ammonia is sometimes used to obviate the stickiness; but it removes the natural oil from the skin, leaving it dry and harsh.

30. Avoid the use of much *soap* in bathing. In some occupations, the skin is so begrimed that soap is necessary, at least once a week, and the hands may require it daily, or oftener; the skin should be well rinsed with pure water afterward. Unless there are special reasons for using it, soap can generally be dispensed with during the bathing process.

31. There is great danger, particularly when the vitality is feeble, of bathing too much. In these cases fewer baths should be taken, and not much soap used.

32. In washing the head, soap makes the skin dry, and creates dandruff. To cleanse the hair and scalp, a good plan is to beat up an egg (yolk and white together) in a very little water, and use instead of soapsuds. Then rinse well with tepid water, and repeat till this comes off nearly clear.

*Caution.*—Avoid removing too much of the *cuticle* from the skin by the use of soapsuds, hot steam baths, too vigorous rubbing, and so forth. The skin has its own covering or epidermis, and cannot afford to part with it too freely. Some persons fancy that a great deal of dirt is removed in taking a Turkish bath, when they are simply stripping the skin of its natural covering, and leaving the nerves relatively bare. Let us be temperate in all things.

#### BATHS.

There is a great variety of baths in use among civilized people. Some of them are so simple that they

can be taken without the aid of an assistant; others require more or less apparatus, and greater skill in administering them. The baths here described are limited to such as are in common use, either in the private home or the sanitarium.

*Towel or Sponge Bath.*—Take this in a room that is comfortably warm, and have the water of a temperature that will secure prompt reaction. For most persons, tepid water is best. With extra good vitality, one may enjoy a cold sponging; but for those who are feeble, the water should have the chill off; and if very feeble, it should be nearly or quite as warm as blood heat. Very much will depend upon the power that there is to react; there should be a good glow on the surface after taking the bath.

Have everything that will be needed, close at hand; towels, wash cloth, hot and cold water, slop pail, etc. One or two newspapers laid down, will protect the floor or carpet. Persons who are not strong, or who have a tendency to rush of blood to the head, will react better if the face and neck are bathed at another time, especially if much rubbing is done. In these cases simply wet the face and neck, sponging lightly; then partly dry the skin, and let the rest of the moisture evaporate. That cools the head, prevents cerebral congestion, and the reaction will be better over the rest of the body. It is also a good plan to wet the top of the head with cool or cold water, before beginning to bathe. This done, wash one arm, dry well with a coarse towel, and rub with the bare hand till the skin is warm. Then bathe the other arm, proceeding as before; next the front of the body, the back, one leg, then the other, and lastly the feet; these must be left

dry and warm. Finish with light percussions from head to foot, till the skin is in a glow.

For persons who are sick in bed, this bath must be given by an assistant; and if the patient is very feeble, it may be necessary to bathe a portion of the body at a time, letting him rest between. In any case, the rule is to expose only that part which is to be bathed; the rest should be kept under cover, and comfortably warm. Also have a soft warm blanket near at hand, and as soon as an arm or other part is bathed throw the cover over it. By a careful observance of this rule, no cold drafts will be allowed to chill the patient, and prevent good surface reaction. The feet (the last to be bathed) should remain covered until you have finished the rest of the body; even then, take one foot at a time, covering it well after it is dried and rubbed. And be sure that a bag of hot water is laid in at the feet and under the covers, to prevent their getting chilled.—Unless the bedding is to be changed after the bath, an extra sheet (warmed) should be spread in, under and around the patient, to protect the bed from moisture.

Rather a good way to cleanse the skin when water is scarce, and more ample appliances for bathing are not to be had, is the following: Wring a towel out of water, cold, warm, or tepid, having it so that it will not drip, and with it rub every part of the body thoroughly. Begin with the head and end with the feet, rinsing out the towel from time to time. In bathing the back and shoulders take one end of the towel in each hand, and with a sawing motion use force enough to redden the skin. When every part is gone over remove the moisture with a dry towel, and follow with brisk percussions. A good rule for most persons, is to expose the

body to the air for a few minutes before dressing. It secures a more permanent reaction.

In taking a sponge bath the feet may be left covered, particularly in cold weather. This is the more needful with persons of feeble vitality. The stockings and slippers may be left on till the rest of the body is bathed. The best time for the bath is either on rising, finishing at least half an hour before breakfast, or it may be taken mid-forenoon. With most people, the reaction is not so good later in the day; and for those who are feeble, bathing at night generally creates nervousness, often with cold feet. If there is a tired feeling after the bath, lie down and rest; and if the feet are cool or cold, put something warm to them.

Sometimes when the water is scarcely warm enough, it is best to apply it to the body with the hand, instead of a sponge or cloth. It is not so apt to chill the skin; and if done quickly there is less danger of taking cold. Have a little hot water to dip the hands in from time to time; this will keep them from getting chilled.

In warm weather when the skin perspires freely, light sponging may be done daily; not much rubbing is needed. It may be taken for cooling purposes, as well as cleansing; and the fact that it does cool, renders it refreshing.

Where from habits of eating or otherwise the skin inclines to be greasy, or sticky to the touch, the use of *soap* in bathing is often necessary; it cleanses the skin thoroughly, and facilitates cutaneous depuration. In the absence of a regular bath tub and other appliances, a sponge bath with soap may be taken as follows: Proceed as in a plain sponge bath, using very little *hot* water, a wash cloth, and a piece of castile or other good soap. Begin with the face and neck, smearing first with

soapsuds and then rinsing with clear hot water; then give a dash of cold water with the hand, before drying with a towel. Rub till the skin is in a glow. Next take an arm, bathing it in the same way; and continue the process until the whole body is cleansed, giving special attention to the feet. This bath is very beneficial, not only in perfect health, but when there is slight indisposition; and where the individual is not exceedingly careful in regard to diet, etc., it may be taken to advantage as often as twice a week.

*Hot and Cold Hand Bath.*—A very excellent bath, which can be taken in almost any private home, is the one here described. It is like the sponge bath, with this exception; after washing the part in water that is warm or *hot*, dip the hand into *cold* water, and apply it to the part already sponged. Then partially dry with a small towel, and *rub thoroughly* with a Turkish or other coarse towel.

Beginning with the head take a portion of the body at a time, and finish each before proceeding to another. Every part must be left dry and warm, and the skin in a glow. On bathing the feet, a good dash of very cold water over them will generally insure a fine reaction; dry well, and rub vigorously with a coarse towel. When every part is bathed, apply light percussions from head to foot; then faithful hand rubbing which will call the blood to the surface of the body.

This bath can be given to patients who are quite feeble, provided the bathing is properly done. If the room is comfortably warm, the body can be exposed to the air for a time before dressing. For one in ordinary health, every morning would not be too often to take the bath.

*Hot Spongings.*—This form of bath is sometimes



given for the purpose of determining action more strongly to the surface of the body, and relieving congestion of the internal organs. The skin is inclined to be cold, the extremities are bloodless; and by increasing action in the surface capillaries, the general circulation is better balanced.

Wring a soft flannel cloth (properly folded) from *very hot water*, and apply it to the upper portion of the arm until the skin is red; then dry with a towel, using little if any friction. Continue this process, doing it quickly, till ever part of the arm (including the hand) is reddened. Then cover it, and treat the other arm in the same way. Next, sponge the front of the chest, and over the abdomen. This done, take the back, and proceed as before. When the trunk is bathed, take first one leg and then the other, finishing with the feet which must be left warm.

While giving this bath, have a bottle of hot water at the feet. Expose at one time only so much of the body as is to be bathed; then cover the part, and avoid drafts. Let the patient rest afterward.

*Full Bath.*—To take a full bath, a tub the length of the body and properly constructed, is necessary. The room should be comfortably warm; not cooler than 70° or 75° F., particularly for invalids. Have plenty of hot and cold water at hand, so that the bath may be of any temperature required. For most persons, 94° to 96° F. is about right; though it may be warmer or cooler to suit physical conditions. Reduce the temperature from five to eight degrees, just before coming out of the water. A good coarse wash-cloth and at least two towels, are needed; sometimes a sheet thrown over the body, is substituted for the towels. If taken specially for cleansing, use a little soap with this bath.

There should be enough water in the tub to cover the body when lying down. While in the bath wash every part thoroughly, then rub with the hand to insure a good reaction. The washing and rubbing, especially of the back and between the shoulders, are best done by an assistant. From five to ten minutes is usually long enough to stay in the bath, unless it is taken for cooling purposes, as in a fever. Let the drying be done quickly but thoroughly, giving the feet careful attention. After using the towels, follow by rubbing with the hand from head to foot. Then finish with percussions, giving them in the same order. It is always well to expose the surface of the body to the air, several minutes before dressing; this has a good tonic effect.

Not every one can take the full bath daily, even when its temperature is graduated to suit the individual. Persons who are not strong, should have it only occasionally, resorting to the sponge bath between times. Or a quick pouring bath may be substituted for either. If only in the water a short time, the effect of the full bath is less weakening; though some invalids will do better without it. Too much bathing, even for strong persons, should be avoided; the strength of the individual should determine the amount. For persons in average health, the full bath two or three times a week is not too much; or it can be taken once a week, with sponge baths between.

*Hot Bath.*—This is the same as the full bath, except that the water is invariably hot. It is taken for special purposes, as to break up a cold. The object is to produce perspiration and relieve congestion, either in the mucous membranes or elsewhere. When there is great nervous irritability, the hot bath is sometimes very beneficial. In cramps or spasms, it relaxes the muscles

and gives relief; and where the joints are swollen and sore from the use of mercury, antimony or other metallic drugs, it may also be employed to advantage. Have the bath as warm as the patient can bear with comfort; the degree of heat will vary with different individuals. Always reduce the temperature several degrees before he comes out of the water.

This bath if continued too long, is debilitating. The skin becomes congested; and with feeble people the *internal* organs may congest, leaving the surface chilly. As soon as the desired effects are obtained, the bath should be discontinued. In breaking up a cold, it may have to be repeated. Brisk rubbing with smart percussions after the bath, will help to secure a good reaction; and the patient must avoid getting chilled. He may lie down and rest, with something warm to the feet; or if strong enough, a short brisk walk can be taken in the open air.

*Half Bath.*—The half bath is not so heroic as the full bath. It is taken in the ordinary tub; and it differs from the full bath in having the water not quite so deep, the patient sitting in it, but never lying down. The temperature as a rule should be cool or tepid, rather than warm; say from 75° or 80° to 92° F., according to the purpose for which it is given. The water should cover the hips and part of the abdomen, and the head be wet before taking the bath. If strong enough, the patient may rub the arms, hips and abdomen, while an attendant rubs the chest, back, and lower extremities. The time to remain in the bath must depend upon the effect which is to be produced. If given as a regular treatment, say every day or every other day, from five to eight minutes is long enough. If administered to relieve pain, it should be discon-

tinued when the pain ceases, or is greatly relieved. But where a soothing effect is desired, the time may be more or less prolonged.

After coming out of the water dry quickly with coarse towels, then rub with the hand, and finish with percussions. Never neglect the feet, but leave them dry and warm.

This bath is very useful in dyspeptic conditions, engorgement of the liver, spleen and kidneys, weakness of the abdominal muscles, and spinal irritation; also in uterine diseases, and disorders of the menstrual function. It may be given in diarrhœa, dysentery, cholera morbus, and other affections of the stomach and bowels, as well as in the early stages of typhoid and other fevers. It has likewise been employed with good results, both in hydrophobia and tetanus, the patient remaining in the bath from one to seven hours, or until it produced a soothing effect.

*Shallow Bath.*—Much less water is used in the shallow than in the half bath; about six inches of water is enough. The temperature ranges from 85° to 90° or 92° F., to suit the individual case; and the time to remain in the bath is from five to ten minutes. An attendant dips the water from the tub, and pours it over the back and shoulders; he also assists in the rubbing. The patient if able, rubs the arms, front of the chest, and the abdomen; and the assistant the rest of the body. Sometimes a good dash of water, the temperature slightly reduced, is poured over at the last.

After drying well with towels or a sheet thrown over the body, rub with the hand till the skin is in a glow, paying special attention to the feet; then end with percussions.

A *standing* shallow bath is sometimes given, princi-

pally for its derivative effect; though it might be called a walking bath, as the patient keeps his feet continually in motion. The object is to draw the blood to the feet, and increase the circulation in them. In this form of bath it should be rather cool, and of short duration.

*Wet-Sheet Bath.*—This bath is sometimes called the “dripping sheet.” It is given as follows: Wring a sheet from tepid or warm water and throw it over the body, enveloping it completely below the neck. For feeble patients, wring the sheet pretty dry; if it is wet enough to drip the patient must stand in a tub, this containing a little warm water. The attendant rubs the surface (over the sheet, not with it), giving attention to the back, shoulders and legs. The patient meanwhile rubs the arms, and the front of the body.

All must be done rather quickly, to avoid chilling. After rubbing every part drop the sheet, and dry with coarse towels. Follow with brisk hand rubbing, then give percussions. The feet must be thoroughly dried and rubbed; the latter can be done while the patient is sitting.

*Pouring Bath.*—Patients who are too feeble to have a full bath, will often react well after a pouring bath. It can be taken in a bedroom or other private apartment. Throw down a bit of carpet or oilcloth to protect the floor or matting, place on it a common tub, and pour in a little warm water. Let the patient, stripped for a bath, stand in the tub. Have at hand a pail of tepid or warm water, and towels for drying. With a basin not too large, pour the water over the shoulders, back and front, so as to wet every part. The pouring must be done at intervals, rubbing between.

A little skill is necessary, to give this bath correctly.

Not much rubbing can be done while the water is poured, else it will spatter badly. The patient if not too weak, can assist in rubbing; otherwise the attendant must do all. If very feeble the process should be hastened, and the patient allowed to sit for most of the rubbing; or he may lie down on a bed or a lounge, over which a dry sheet has been spread. After drying, rub briskly but lightly to warm the surface; not enough to exhaust. This is particularly important where the vitality is low. If the patient is not strong enough to take the pouring bath without feeling tired afterward, then the sponge bath must be given instead.

*Spray Bath.*—This bath is still milder than the one just described. It is what its name implies; a spray of water which can be directed to local parts, either for the purpose of stimulating and strengthening, or for soothing them. The spray attachment consists of two circular pieces of tin or copper, so united as to form double-convex surfaces, one of which is pierced with small holes, and the other carries a rim for joining it to a hose. The latter is connected with a reservoir or force-pump, and the strength of the spray must be regulated to suit individual cases. There should also be an arrangement by which the temperature of the water can be gradually changed from tepid or warm to cool or cold, without interrupting the bath.

The spray bath is used to advantage in a great variety of ailments. The warm or hot spray alternating with the cool or cold, is very soothing to parts that are sprained or bruised, and to joints that are affected with gouty or rheumatic swellings. In cases of withered limbs, tumors, indolent ulcers, etc., with feeble or sluggish circulation in the parts, this form of bath is

of special benefit. It is also employed in spinal irritation, neuralgia, and other local affections.

One great advantage in the spray bath, properly administered, is the facility with which water at different temperatures can be used. Alternate sprays of hot and cold water are often given, to reduce local inflammations; or the temperature may be graduated to suit the feeblest invalid. If taken as a general bath, apply the spray first to the upper portion of the body, and following the course of the nerves gradually descend to the feet. It should not be directed too long to any particular part. As in all other baths the skin should be carefully dried, and afterward rubbed with the hand.

*Douche Bath.*—Not every patient can take this form of bath; but for those who are neither very nervous nor very feeble, it can be employed with much benefit. It is sometimes called the pail douche. Very little apparatus is needed; simply two or more pails of water, with facilities for conducting it away as the bath is given. The water may be warm or tepid, scarcely ever cold. The assistant dashes it on, a pailful at a time, directing it first to the upper portion of the body, back and front, and then to the hips and lower extremities. The patient turns as the water is thrown; it must never be dashed upon the head.

For one who reacts well, this is a very enjoyable bath, as well as exhilarating. Its object is to arouse the absorbents to increased activity. It is well adapted to chronic enlargements and stiffness of the joints, as in gout or rheumatism. It may be taken either by itself or after a warm bath, the douche being cooler than the bath that precedes it.

*Shower Bath.*—The shower bath injudiciously given,

may result in much harm. As often administered, it is too heroic; it shocks the nervous system. To be of service, three things are necessary; the water should not be extreme in temperature, it should not fall from too great a height, and it should descend in small streams.

Not much apparatus is required for this bath; merely suspend a finely perforated basin from one to two feet above the head, and admit to it water whose temperature can be properly regulated. For persons in average health, this should range from 75° to 95° F. It is best to begin with the water as warm as required, and gradually reduce its temperature. Let the water descend on the shoulders, laving all parts of the body except the head; then follow with thorough hand rubbing, after drying with towels. The bath should not be continued too long; from five to ten minutes is long enough.

*Plunge Bath.*—Where space has to be carefully economized, this form of bath is hardly practicable. When employed there should be water in abundance, and not too extremely cold. For this purpose, have a large box or tank conveniently located, and so connected with the water supply that it will be easy either to run off the water, or to admit fresh. Where a number of sick people take the plunge bath daily, it has been objected that the water will become more or less contaminated with disease germs; hence the need of changing it frequently, and also of cleansing the tank from time to time. The water should be four or five feet deep; and the basin or tank may be large enough for swimming exercises.

After plunging, do not stay in the water too long; as soon as the reaction, it is time



to terminate the bath; not wait for a second chilling, which may do much harm. From two to five minutes, is long enough to remain in the water. This bath should never be taken by patients who suffer from local congestions. Where there is a tendency to hemorrhage, rush of blood to the head, weakness of the heart or lungs, or any organic disease, this bath is contra-indicated; also in dropsical conditions, and cases of low vitality with a feeble determination of blood to the surface.

The plunge bath is sometimes employed after the wet-sheet pack; or it may follow a hot bath with free perspiration. But unless there is a good degree of vital force ensuring prompt reaction, this bath is too heroic. Persons with feeble vitality, will receive more benefit from a milder form of treatment.

*Vapor Bath.*—The vapor bath is useful in breaking up a cold, or “stopping the chills”; also in various chronic affections, as rheumatism, incipient dropsy, skin diseases, torpid liver and kidneys, etc. It must not be employed too frequently. It is generally followed by some form of cool or cold bath, as the shower, spray, dripping-sheet, or plunge, these being of short duration. Then a good hand rubbing should be given, after the surface is dried. The bath cabinets can now be purchased at moderate cost, or the simplest apparatus for a vapor bath, and one that can be had in nearly every private home, is the following: Place the patient on a cane-seat chair with a dry towel spread over it, and throw around him a white woolen blanket, and then two or three clean comfortables. Having drawn these close about the neck to exclude the air, let them fall on the floor for the same purpose. Now place under the chair

a vessel containing, say three quarts of boiling water, and quickly bring the wrappings together to keep in the steam. A minute or two later raise the blanket at one side, and carefully introduce into the vessel a very hot brick or stone. Before it has cooled add another, and so continue until the patient is perspiring freely; this can be seen by looking at the face. A spirit-lamp, if there is one at hand, may be used to heat the water in the vessel. Regulate the heat if it is too great, by admitting a little cold air; but do not chill the patient in the process. Keep the head wet by a cold compress, frequently changed. If the face flushes or the head aches, the bath is too hot; sometimes faintness is produced. Have the temperature from 100° to 115° F.; and continue the bath from fifteen to twenty minutes, seldom longer. Give immediately the bath that is to follow, and avoid chilling the patient.

Where the vapor bath is much used, as in a sanitarium, there should be a permanent arrangement for giving it. A small cabinet, say three feet square and four feet high, is provided with a cane-seat stool on which the patient sits; his head remains outside, by an opening at the top of the box. A towel wet in tepid or warm water is then placed around the neck, to prevent the steam from rising about the head. A gas burner or spirit-lamp is employed for generating the steam; or it may be introduced into the cabinet by a rubber tube, connected with a steam boiler.

What is called the Russian bath, does not differ essentially from the vapor bath just described, with this exception; instead of having his head out, the patient is entirely surrounded by the vapor. The temperature of the bath should range from 100° to

115° F.; it is sometimes taken warmer, but this is not necessary, and it may be harmful. Keep the head constantly wet, by a cool or cold compress frequently renewed. A towel wet with tepid or cool water is sometimes put around the neck and shoulders; and if the head or lungs congest, cold air may be admitted. After the vapor bath the skin is rubbed with soap, and a cooling bath administered; it may be the spray, shower or plunge bath.—The Russian bath can hardly be recommended; the simple vapor bath is better, and there is less danger of congestion or other complications.

*Electric Bath.*—A very simple way of administering the electric bath, is as follows: Turn on the water for a full bath. Then place a copper or zinc plate covered with a sponge, in such a position that the feet will press against it; or it may be put under the calves of the legs. A similar plate covered with a thick sponge, is so placed that the back of the head and neck will rest upon it. After these are in position, connect the plate at the head with the positive pole of a faradic battery, and the one at the feet with the negative pole. The strength of the current must be regulated to suit the case.

In an establishment where electric baths are regularly given, a more elaborate apparatus is required. The battery used is more complex, and the current can be graduated or modified at pleasure; or it may be made to pass through any particular part of the body. From ten to fifteen minutes, is long enough to remain in the bath. The temperature of the water may be warm, cool or tepid, as required.

The electric and the vapor baths are sometimes combined. By the use of a simple faradic battery, it is an easy matter to employ the electric currents in connec-

tion with the vapor bath, in almost any of the forms in which it may be administered. Equally good results can be obtained however by taking the two separately, and it is less trouble.

*Sitz Bath.*—Aside from the general bath which is used for cleansing the whole surface of the body, there is scarcely any that is so much in demand, especially for invalids, as the sitz bath. This is sometimes called the hip bath. It is very simple in form, and easily administered; but the purposes that it subserves are many and varied. It may be given as a hot bath to produce perspiration, either in breaking up a cold, or to relieve pain; or to cleanse the system, by promoting rapid depuration through the skin. It is often employed as a cooling bath, to reduce the temperature, as in a fever. Or it may be taken to relieve congestion, in the head, lungs or other part of the body; and it is frequently prescribed on account of its soothing effects. It is particularly useful in spasmodic diseases, and in nearly all pelvic disorders, acute or chronic. It is also of service in diarrhœa, dysentery, constipation, piles, and diseases of the sexual organs.

Let the room be comfortably warm, say 70° or 72° F. The temperature of the water should vary, according to the purpose for which the bath is administered. If this bath is taken too warm, it will relax; if too cold, it will shock the nervous system and tend to weaken it. In most chronic disorders, its temperature should be from 90° to 95° F., reducing it 5° to 8° at the end. The temperature that is best, will vary several degrees in different cases, and for different individuals. That which would benefit one, might seriously injure another; the conditions that are present must always be taken into account. A pretty good — no ther-

mometer being at hand, is to have the water so that it will feel slightly cool on sitting down in it; for nervous patients however the water must not feel chilly.

From twenty to thirty minutes is usually long enough to remain in this bath; though no definite time can be given. When taken for a cold, it should be continued until free perspiration is produced, hot water being added from time to time. Then reduce the temperature several degrees, remain two or three minutes longer and come out of the bath.

In taking the sitz, strip as for a full bath, except that the shoes and stockings are left on. Sit down in the water, and have an attendant throw a blanket or quilt around you, tucking it in well behind. If sweating is to be produced have an extra blanket, and the room a little warmer than usual.

The sitz bath tub is generally made of tin, and painted. It has a rim at the bottom to keep it off the floor, and a high sloping back against which the patient leans. It should be deep enough in front to allow the water to come well up over the hips; though if a shallow sitz bath is prescribed (as for piles), less water will be needed. There are different sizes of the tub, to accommodate lean and fat people.

When the bath is taken to cleanse the skin remove the blankets at the end, and slip off the shoes and stockings; then stand in the tub, and have a basin of water poured over the shoulders. Or you may dip the hand into the water before leaving the bath, and give the whole body a good rubbing. For this bath a common washtub may be used. You can elevate the back of it a little by slipping under a piece of board or wood, which will relieve the pressure under the knees. It is better however to be provided with the regular sitz tub.

*Foot Bath.*—Very few persons know how to give a foot bath. In order to administer it properly, one must understand what is to be accomplished by it. For this bath you may use a foot tub made for the purpose; or a bucket or basin will answer, provided it is not so small as to cramp the feet. The temperature of the water, the amount used, and the time to continue the bath, will depend upon the results that are to be produced. An effective way to chill the feet is to put them into tepid or warm water, and keep them so immersed for an indefinite length of time; then half dry them, and put on shoes and stockings that are cold.

Taken simply to warm the feet, have the bath as hot as can be comfortably borne, and use just enough water to cover them. While in the bath have a shawl or blanket thrown around the tub, let it come well up over the knees, and carefully tuck it in behind them. In from three to five minutes lift a foot at a time out of the bath, dash over it a cup of cool or cold water, and dry well with a coarse towel; see that no moisture is left between the toes. Follow with thorough hand rubbing until the skin is in a glow; percussions are also excellent, these being given on the soles of the feet. For feeble patients, this must be done by an assistant. The shoes and stockings should be warm. After drawing on the latter, place the hands one above and the other below the foot, and rub it briskly; the stockings hold the heat as it is generated, and the feet get warm more rapidly. If the patient is strong enough, a little tiptoeing after the shoes are on, is a good exercise; or a short brisk walk may be taken. Feeble invalids should sit much with their feet in the sun; this helps to keep them warm, and to draw the blood away from congested parts.

For cold feet, the alternate hot and cold foot bath is sometimes employed. Put the feet into water as hot as can be borne, and let them remain until they are red; then into very cold water for two minutes, or until they are chilled. Take the hot and cold alternately two or three times, ending with the cold bath which should be of short duration; simply plunge the feet quickly into the water, and remove them. Then wipe dry; and if the feet are not in a glow, add rubbings and percussions. To secure a good reaction, the patient must possess a fair amount of vital force. The hot and cold foot bath given as above directed, stimulates capillary circulation; and for this reason it is often prescribed for chilblains.

If taken to relieve pain, as a headache, continue the bath longer, say half to three-quarters of an hour. Hot water will have to be added, every few minutes. As soon as perspiration sets in, the pain is generally relieved. In whatever way the bath is administered, the cold dash at the end, the careful drying and the vigorous rubbing, are always in order. So are the warm shoes and stockings, provided the feet are to be dressed. In taking a foot bath, never throw the water up on the ankles, as it will make them cold by evaporation. When used to relieve headache, keep the head constantly wet. It may also be lightly shampooed at the end; this increases capillary circulation in the scalp, and lessens cerebral congestion.

The foot bath is often combined with the sitz, either for its derivative effect, or to induce free perspiration. When employed for the latter purpose, the water in both the sitz and foot baths must be kept hot, until the skin perspires freely. Then let the patient stand in a tub, and pour a basin of tepid water over the shoulders, back and front, which will cleanse the skin thoroughly.

Dry well with coarse towels, and finish with brisk rubbing or percussions. In taking the bath hot, never wet the head with very cold water, as this will tend to prevent perspiration.

Both the sitz and foot bath are useful in neuralgia, catarrh, earache, toothache, inflamed eyes, and congestion of abdominal or other organs. Where there are no conveniences for the sitz, the foot bath is sometimes substituted. Taken on going to bed, these baths have a quieting effect, and the patient rests and sleeps better.

*Head Bath.*—To take the head bath, an assistant is necessary. One way of administering it is to have the patient lie on his back, with his head in a shallow basin of water; this may be hot, cool or cold, according to the conditions that are present. Or you may use very hot water for a few moments, reducing its temperature to cool or cold at the last. The face and temples should also be bathed.

A better way of giving this bath, in most cases at least, is by a pouring process—the pouring head bath, as it is sometimes called. The patient lies with his face downward; and the head, which is held by an assistant, projects over the side of the bed, the latter being protected by an oilcloth. The water is poured from a cup or basin, falling upon the crown of the head, and is received into a tub or other vessel at the side of the bed. Wet the head on top before the pouring is commenced, the hair being thoroughly saturated by using a cloth or sponge. Regulate the temperature of the water to meet the requirements of the case; as a rule, either cool or cold water is employed. This bath is often prescribed for patients who are suffering from congestion of the brain. There being too much blood in the head, the increased heat continues to draw it



there; and the object of the bath is to send the blood to other parts of the body. Using water that is cool or cold, the pouring if continued from twenty to thirty minutes lessens the heat in the head, and the blood is distributed elsewhere.

In fevers, this bath is particularly useful; it reduces the temperature of the body promptly, and very little apparatus is needed in giving it. Not only so, it is often administered in cases where other appliances, as the full bath, the wet-sheet pack, etc., cannot be employed. This bath is used with good effect in nearly all forms of cerebral congestion, whether in fevers, sun-stroke, epilepsy, hysteria, delirium tremens, acute mania, or apoplectic conditions. It is also of service in chronic affections of the eye and ear; and in headaches, hemicrania, rush of blood to the head, etc.

*Arm Bath.*—This form of bath is applicable in case of sprains or injuries, felons, chronic ulcers, skin diseases, etc., using a common foot tub. The water may be hot, cool or cold, whatever temperature gives the greatest relief. The length of time for the bath, will depend upon the effect that it produces. As soon as relief is afforded it should be discontinued, renewing it from time to time as the occasion requires. For a felon on the finger, immerse the arm in water to the elbow; then vary the temperature till the bath feels comfortable, and continue it until the pain is diminished.

A treatment called the leg bath is sometimes prescribed; though the shallow or half bath can nearly always take its place, and the results obtained are equally good.

*Soap Bath.*—The soap bath, so called, is only useful in special cases. For example, to remove head lice the

hair may be thoroughly saturated with soapsuds, rubbing the scalp well; then rinse with clear water. Or in certain skin diseases, as the itch, a good way to cure it is to apply an ointment of sulphur and grease to the skin, letting it remain on several hours or over night, and then wash with a strong soapsuds; this has to be done two or three times. Good soft soap is best in these cases; dissolve a pound of it in a gallon of hot water, and apply warm or tepid.

If taken as a full bath, the temperature may be regulated to suit the condition of the patient; though for persons who are very feeble, the soap bath is seldom prescribed. The hot bath of itself tends to relax and weaken; and the soap bath given hot, would be still more heroic. Where there is a very gross condition of the system, the skin greasy and badly clogged, this bath is often of service; but the patient must have a good amount of vitality, a well-balanced circulation, and no serious organic trouble. If taken hot the bath should be of short duration, and its temperature reduced at the end. Then follow with a quick pouring bath of tepid water, to remove the soap.

*Turkish Bath.*—This bath cannot be recommended for every individual; it is too heroic for feeble people. Persons who are reasonably strong, and who have a well-balanced circulation, may take the Turkish bath with no serious effects during or after it; perhaps with benefit, especially where the dietetic habits are bad, and the skin is greasy. But those who live hygienically, the skin being unobstructed and depurating freely, will seldom or never require this bath; and where the heart's action is feeble, or there is a tendency to congestion in the brain or other organs, a treatment so heroic would be dangerous.

In taking the Turkish bath two or three rooms are necessary, these maintained at different temperatures. After undressing, the bather enters a room in which the heat is  $120^{\circ}$  to  $140^{\circ}$  F., and remains in it several minutes. Then he passes into another room where the temperature is  $150^{\circ}$  to  $170^{\circ}$  F.; sometimes there is a third, in which it is from  $200^{\circ}$  to  $240^{\circ}$  F. But this degree of heat is not actually necessary; in fact,  $140^{\circ}$  would be sufficient, and there is less danger than where the temperature is higher.

Those unaccustomed to taking the bath sometimes experience a feeling of suffocation, from the heat and dryness of the atmosphere; but this disappears as soon as one begins to perspire freely. After some minutes, the individual is conducted into a room with a lower temperature, say a little above or below  $100^{\circ}$  F. Here he is placed on a marble slab, and well rubbed, kneaded and manipulated by an attendant; then a thick lather of soap and water is applied to the whole surface, and the skin is scoured with a flesh-brush or rubbed with the hand. The rubbing is followed by a shower or spray bath, which reduces the temperature of the body to nearly the normal standard. Then comes the plunge into cool or cold water; though many people prefer to end with the spray bath, which is milder.

Next, the individual is quickly dried with towels, rolled in a sheet—a blanket also if there is need—and lies down in a room heated to  $70^{\circ}$  or  $80^{\circ}$  F. When sufficiently cool he dresses himself, and the bath is completed. The time required for it, is from one to two hours. To compensate for the loss of fluids due to perspiration, water should be freely taken during the bathing process.

This bath is prescribed for rheumatism, gout, dropsy,

jaundice, obesity, skin eruptions, syphilitic diseases, and other affections in which there is a gross or impure state of the blood. It promotes rapid depuration through the skin; and where the patient has sufficient vital force for prompt reaction, impurities are often eliminated from the system in a short time. It must be said however, that the amount of matter which the skin parts with in taking a Turkish bath, is not all of it dirt. By removing too much of the cuticle or outer portion of the skin, the nerves and blood vessels are unduly exposed. Only a certain amount of waste from the surface of the body, is normal; all in excess of that amount is abnormal.

The only difference between the Turkish and the Roman bath, is that in the latter the skin is thoroughly rubbed with oil, after the spray or plunge bath. Sweet oil or vaseline may be used for this purpose; though pure cocoanut oil is generally preferred.

*Mud Bath.*—The mud bath, as it is called, has been employed as a therapeutic agent in several European countries, and to some extent in the United States. To give this bath, clean earth is diluted with water (also clean), until it is the consistency of soft dough; not so soft however as to make it sticky. It may be warm, cool or tepid, to suit the case. The patient lies on a cot, which is covered with mud to the depth of several inches; a clay more or less adhesive, is best. In this, the patient is completely enveloped except the head, the mud forming a sort of water dressing or pack. The time to remain in the bath, will depend upon the condition of the individual; it may be half an hour, or an hour. After coming out of it, the patient is bathed or sprayed with water that is cool or tepid, then dried with towels, and the skin well rubbed.

There is no doubt about the efficacy of the mud bath; and it is applicable in any case in which the wet-sheet pack would be of service. The virtue in it consists of heat and moisture, to which is added, the disinfecting properties of the earth. It may be recommended in the treatment of chronic ulcers, skin eruptions, etc. Its effect is cooling and soothing to the surface; and inflammation, local or otherwise, would be reduced. To increase its therapeutic value, no foreign ingredient is needed; pure earth and pure water are sufficient.

*Mineral-Water Bath.*—If no water could be had except that which contains minerals, these baths might not only be tolerated but recommended. The mineral that the water holds in solution would do no particular harm, except that it is irritating to the skin, and still more so to the mucous membranes. Fortunately, little if any of the mineral ingredients can be absorbed through the skin, and so the system is not poisoned by them in bathing. But in drinking the water, these ingredients enter the blood and contaminate it; they are also deposited in the glands, causing more or less irritation, and often enlargement of these organs. Goitre, it is well known, may be produced in this way; so may other swellings or enlargements in the glandular system. Then the question arises, if these foreign ingredients, earthy or metallic, are bad in the water, why should they be used as medicines?

Mineral baths are administered the same as soft-water baths; though an improvement would be, to boil and settle the water before using it. In this way, some of the ingredients, as lime, might be partially eliminated. In a number of our most celebrated Springs, noted for the cures that are wrought, the water is soft, and almost absolutely pure. Given equally pure air,

wholesome food, plenty of exercise and other hygienic conditions, these Springs, except for the drug medicines administered, ought to accomplish all that is claimed for them, and more.

*Salt Bath.*—In certain conditions of the skin, salt in the water used for bathing, would be an improvement. Owing to its aseptic properties the salt cleanses the skin, and leaves it free from that stickiness which it sometimes has, and which is exceedingly unpleasant to one who suffers from it. When the skin and other organs are clogged or torpid, as from a surfeit in the system, sea-bathing is often recommended. Not only is the skin cleansed by the bath, but the salt stimulates it to increased activity, and determines the blood to the surface. Where there are night-sweats, a similar advantage would be derived. There may be other conditions of the skin however, as where it is covered with eruptions, in which salt would irritate. In these cases, pure fresh water would be better.

The question is sometimes asked, whether there is not some special property in the water of the *ocean* which renders it beneficial. To this it must be replied, that it possesses no such specific quality; the salt in the sea, is simply chloride of sodium. The latter dissolved in pure water, and in about the same proportion that it is found in the sea, will answer every purpose, so far as saline qualities are concerned. Whether there are other conditions at the sea-side which promote health, will depend upon circumstances. Frequently the dissipations at these watering places, more than counter-balance any good that may be derived from the bathing; besides, sea-bathing is often overdone. So far as the bath itself is concerned it is an easy matter, at home or elsewhere, to add salt to the water if it is needed.

Generally speaking, pure soft water is better than any other for bathing purposes.

*Medicated Bath.*—Some people have an idea that a bath with only water, does scarcely any good; they think there should be something in it besides water. An authority much quoted, uses mustard in many of the baths that he prescribes; poppy heads are also recommended. Medicines of various kinds are employed in this way; though if ever there was an arrant humbug invented, it is the medicated bath. Pure water free from adulteration, is not only the pleasantest to the skin, but it is better suited to the needs of the vital organism. One thing is true, however; if people must dabble with poisons, mineral or otherwise, to make the application externally is the least injurious. Most drugs will do relatively little harm in the bath, provided they do not make the water hard and irritating to the skin.

As a rule, not enough of these foreign ingredients can be absorbed by the skin to poison the system; so that a medicated bath will not create half the mischief, that the same drug would if taken internally. There is a choice of evils; it is better to bathe in a poison than to swallow it. Not only so, drugs received into the *stomach* do less damage, than when they are injected into the general circulation. The arch-fiend in the drug medical practice, is the hypodermic syringe. It introduces the enemy into the very citadel of life; there is not even a mucous membrane, to protect the living tissues from the deadly foe.

*Milk Bath.*—Why milk should be used as a bath when water is every way more suitable, it is difficult to say. True, there is a large per cent. of this fluid in milk; and if water pure and simple could not be had,

milk would do as a substitute. Just as it is used instead of water in making a poultice; milk will supply heat and moisture, and these are the essential ingredients in all poultices. As for the nutritive elements that are absorbed during a milk bath, they are practically *nil*. Under all ordinary circumstances, water is the proper thing for bathing purposes.

*Oil Bath.*—Where the skin does not secrete the normal amount of oily or sebaceous matter, it becomes dry and harsh. In these cases a pure oil, as cocoanut or olive oil, may be applied after the bath, using it in moderation. The following is the way to administer it: First give the patient a tepid or warm bath, drying well afterward. The assistant then pours a little oil on his hand, and proceeds with the rubbing; the skin should be thoroughly kneaded during the process. Continue until the entire surface of the body is gone over; then wipe clean with a soft towel, to remove any excess of oil. The skin should be left warm and soft. There are some patients whose skin is so very sensitive, that they cannot take this bath with comfort; the nerves are so near the outside, that the oil produces irritation and smarting. But with most persons, there is not that extremely sensitive condition; and the rubbing that generally follows a bath can be more easily done, when the assistant uses a little oil on the hand. For this reason if for no other, the oil bath can be recommended.

Another way of giving the oil bath, is first to sponge the body lightly with tepid or warm water; dry with a towel, apply the oil as before, and let the patient rest a while, say an hour. Then sponge again with tepid or warm water, and dry thoroughly.

*Hot-Air Bath.*—The object of the hot-air bath, is to promote active depuration through the skin. It is often



prescribed in those cases in which the system is laden with some specific virus or impurity; for example, in snake-bites, malarial poison, hydrophobia and syphilis. With pure air and a strict diet, no additional poison would be taken into the system; and by making the skin perspire freely, that already in the blood will be thrown out.

To administer this treatment, proceed as for a vapor bath. Let the patient sit upon a chair; a cane-seat is best. Put under it an alcohol lamp, this being so placed that nothing will be set on fire. Then carefully exclude the air outside by means of a blanket or quilt; or use the bath cabinet. The heat of the bath may range from 130° to 160° F. The head should be kept wet, and the treatment continued until the whole body is bathed in perspiration. Follow with a tepid bath, pail douche, or rubbing wet-sheet; or you may use the spray. Be careful that the patient does not get chilled. Finish with rubbings and percussions, leaving the skin in a glow.

Persons who are feeble, should not remain in the hot-air bath too long; and if very feeble, it may be too heroic for them.

*Thermo-Electric Bath.*—In this bath, electricity from a faradic battery is combined with the hot-air bath, which has just been described. Place under the feet a plate that is connected with the negative pole of the battery. Then for general faradization, place the positive electrode at the back of the neck or base of the brain, and regulate the current to suit the condition of the patient. For local faradization, put the positive electrode over the organ or part that is to be especially treated, keeping the negative at the feet.

The thermo-electric bath is prescribed for neuralgia,

rheumatism, and other chronic ailments; also in those cases of blood poisoning which have been enumerated in connection with the hot-air bath.

*Air Bath.*—The air bath has greater therapeutic value than is generally ascribed to it. Were it employed much more frequently, both the sick and the well would be greatly benefited by it. People in civilized life not only house up too much, but they enfeeble the skin by wearing more clothing than is necessary, or conducive to health. The result is, that we have repeated epidemics of colds, influenzas, pneumonia, and other diseases of the respiratory organs. The air bath properly administered tends to toughen the individual, and render him less susceptible to colds, throat ailments, and lung affections generally. It is by wearing too much clothing, sitting in rooms that are overheated, and otherwise debilitating the skin with its fine network of capillaries, that we impose extra duty upon the mucous membranes, and they become diseased.

This bath may be taken on rising in the morning, or before going to bed at night. Simply divest the body of all clothing, and let its whole surface come in contact with the air. Have the room comfortably warm, but not overheated; it may be 70° to 75° F. for invalids, and about 65° for well persons. Those who are strong enough to exercise while taking the bath, do not require so much heat. Where the circulation is rather feeble, a draft must be avoided; and for those who are very feeble, the patient may sit or lie down a part of the time. If strong and well, either walk about the room or take some other form of exercise; brisk rubbing of the body from head to foot, is excellent, as it helps to call the blood to the surface. After taking a water bath—with the usual drying and rubbing of course—

a good plan is to expose the skin to the air at least ten or fifteen minutes, before putting on the clothes.

For those who are nervous and sleepless, the air bath, taken even for a few minutes, will often have a quieting effect; and whatever the condition of the individual, its tendency is to tone and strengthen.

*Sun Bath.*—Very few private homes have the conveniences for taking a sun bath. A room for that purpose should be so constructed that the direct rays of the sun can enter it, at least a few hours in the day; and to get the maximum of heat, near the middle of the day would be preferable. An apartment in the attic is sometimes devoted to this kind of bath. There must be good ventilation, not only for change of air, but to regulate the temperature of the room.

To take the bath remove all the clothing, and expose the body to the direct rays of the sun; or if the heat is too great, place a screen of thin muslin between. The head should be protected (wet if necessary), else the sun's rays falling upon it may produce congestion. The position of the body should be frequently changed, so as to expose all parts of it equally. In cold weather, the room must be heated to a comfortable temperature; and in very warm weather have it well ventilated, or it will get too warm. The time to remain in this bath, will vary with different individuals; it will also be modified by the conditions that are present. Those who are not accustomed to the sun bath, will require less time than if in the habit of taking it. From ten to twenty minutes, is probably long enough for beginners. This bath may be taken with light friction, a sheet or towel (not too coarse) being used to rub with; and if the skin perspires freely, follow with a tepid sponge or light hand bath, drying well afterward.

The effect of the sun bath is to draw the blood to the surface of the body; the skin becomes more active, and congested organs are relieved. Patients who are suffering from a torpid skin, an unbalanced circulation, or from deep-seated congestions, will be greatly benefited by this form of treatment. So will those who are scrofulous, rheumatic, or otherwise predisposed to disease. The sun is the great vivifier of all animate nature; and to be deprived of its influence, is to check physical development. The lesson to be learned in civilized life, is to give our bodies the benefit of more sunlight and more fresh air. We do not get half enough of either.

For invalids who are on their beds, let them if possible have a room with an eastern or southern exposure; or at least one into which the sun shines daily. Then draw the bed near a window, and have the sun's rays fall directly upon it; if the heat is too great, throw a sheet over the patient. The entire surface of the body except the head, may be so exposed; or if this is impossible, let the sunshine fall on the legs and feet.

The good effect of sunlight is forcibly demonstrated in the Alps of Switzerland. In the deep valleys where the sun shines only a few hours during the day, the inhabitants suffer terribly from glandular swellings. The women especially, who are more indoors, are afflicted with enormous goiters, which have to be carried in a sling; and idiocy prevails to a considerable extent. But higher up the mountains where the sun's rays are not so obstructed, the people are hardy and well developed, mentally and physically. These facts should be borne in mind, in the construction of buildings; let the sun's rays have free access to all parts of the house. The north rooms are the least desirable, whether in private homes or public institutions. It is stated

authoritatively, that the patients in hospitals who occupy sunny rooms, recover much more rapidly than those who are not so favored. There is also a larger per cent. of deaths in the wards which have the least sunshine.

#### VARIOUS WATER APPLIANCES, ETC.

*Compresses.*—Few water appliances are more generally useful than the wet compress. The cases in which it may be of service, are almost innumerable. It is used to reduce heat, to ease pain, to relieve congestions, to keep down or allay inflammation, to stimulate action where it is torpid, and to strengthen parts that are weak. It may be warm, cold or tepid, according to the purpose for which it is employed. When any part of the body is hot or inflamed, the temperature may be reduced by a cool or cold compress, often renewed. You can make it as follows: Take an old crash towel of loose texture, and fold it to the size that is wanted; there should be several thicknesses. Wring this out of water the required temperature, and lay it over the affected part.

When there is much heat, change as often as every five minutes. Except when applied to the face or head, it is generally necessary to protect the bed and clothing from moisture. For this purpose, lay over the wet compress a single thickness of old or light-weight flannel, dry and soft; this will permit evaporation, and prevent overheating. The compress should never be made so wet as to drip. If wanted very cold, put snow or pounded ice between its folds; the degree of cold can be modified by the number of folds, and the thickness of the cloth. But unless the ice is enclosed in rubber or oiled silk, the compress will have to be carefully

watched. It is better in most cases to wring the cloth out of ice-water, and change frequently. Where there is less heat, it is not necessary to renew so often. The water too need not be so cold; you may have it tepid, blood-heat or warmer, varying several degrees to suit the case.

Warm moist heat is exceedingly grateful, especially where there is pain; much more so than dry heat, at least as a rule. Where the wet compress has been kept on several hours and the skin tires of it, a soft dry flannel, warm if need be, may take its place for a while.

In chronic ailments the compress is generally put on warm or tepid, not hot. It should be renewed or removed before it gets dry, and also kept clean by frequent washing. The compress can be worn several hours or over night, provided it does not produce chilliness. Whenever it feels cold or clammy, leave it off; or put a bag of hot water over it to keep it warm. The compress ought never to be worn continuously; throw it off from time to time, dry well with a towel, and let the skin have the air. If applied too long it calls the blood to that particular part of the body, the skin becomes enfeebled, and abnormal action begins. By the too persistent use of the compress, that portion of the skin where it is worn may be turned into a point of depuration; an eruption may also appear. Such treatment is a species of malpractice, and should not be tolerated. The eruption can be made to disappear by leaving off the compress; but the skin will remain abnormally sensitive, a long time afterward. By the same kind of practice boils or carbuncles are sometimes formed, and are very troublesome; all of which is not only unnecessary, but positively hurtful.

The important thing to remember about the compress, particularly when applied temporarily, as in reducing heat or relieving pain, is to have it hot enough or cold enough to effect the desired result, and to change it at frequent intervals.

*Head Cap.*—This was much worn in some water cures, a good many years ago. But it has gone out of use, except as a temporary appliance. In the present practice of hygiene, the head cap is only occasionally resorted to; though it is rather convenient in some cases, as when one is taking a sitz-bath, or a wet-sheet pack. It may also be applied for headache, or when there is rush of blood to the head. In fevers, there is generally so much heat that the cap would get uncomfortably warm in two or three minutes, and would have to be renewed. Wetting the head frequently and allowing the water to evaporate, is perhaps a better method of cooling. Or a compress made by folding part of an old crash towel, may be wet in cold water, placed on the head, and frequently changed.

Before applying the cap, wet the head in cool or cold water, saturating the hair to the roots; then wet the cap and put it on. If it feels uncomfortable, remove it; some persons who have a tendency to congestion of the brain, do not tolerate it very well. When worn, change it frequently, and never allow it to get dry. In very hot weather, the head cap beneath the hat may be of service; though a wet sponge will perhaps do as well. In diseases of the scalp, as eczema, it may be employed; wear it most of the time till the scalp heals, wetting the cap often, and washing it thoroughly from time to time.

To make the head cap, take a strip of coarse linen, soft and porous, fold it together, and cut a length that

will encircle the head. Having joined the ends, gather the raw edges onto a circular bit of cloth also double, and of the same material, which will form the crown. It should be made large enough to fit rather loosely, and to cover the entire scalp. If too tight, it will congest the brain; if it gets dry, it will do the same thing by overheating. Or if worn habitually, it tends to draw the blood to the head; to congest the brain, rather than to relieve it.

*Wet-Girdle.*—This has been called by various names; as the abdominal wrapper, bandage or compress. It may be made by taking a long coarse towel of loose crash, wetting this in water, and wrapping it around the body so as to cover the abdomen, and the back over the kidneys. Then put on a strip of flannel or unbleached drilling to keep in the moisture, and fasten with safety pins. A better way however is to gore the girdle slightly at the sides, so as to fit nicely over the hips; it should be made double, of loose crash toweling, and long enough to allow an extra fold over the abdomen. *This* girdle is for wetting. Then cut and make a similar one of coarse unbleached drilling, having it a little longer and wider than the other; it must also be double. After adjusting the wet girdle apply the dry one over it, making an extra lap in front, and fasten with safety pins.

For patients with limited vitality and feeble reaction, the wet girdle cannot always be prescribed. In these cases, a wet compress can often be applied in front, over the abdomen, leaving the back free; then to hold it in place cover with the outer wrapper, made of material that is not too thick and heating. The wet girdle is frequently worn at night; if it produces chilli-



ness remove it, or apply a bottle of hot water over it. Never let it remain on until it gets dry. After removing it, dry the parts well with a coarse towel.

The wet girdle is particularly useful in inflammation of the stomach and bowels, constipation, diarrhœa and dysentery; also in congestion of the liver, spleen and kidneys, and in uterine derangements. It may likewise be used to strengthen relaxed muscles, either of the abdomen or back. In applying the wet girdle the temperature of the water must vary, to meet the requirements of the case under treatment. The length of time that it should be worn will also vary, with the physical conditions that are present.

Like the compress, the wet girdle should be employed judiciously. If worn too long and without intermission, the skin becomes debilitated and rashes may make their appearance. In other words, the parts of the skin covered by the girdle have lost their healthy action, and become points of depuration. This should always be avoided. If the rash has already appeared, the way to heal it is to leave off the girdle. All these water appliances should be used, and not abused.

*Chest Wrapper.*—The chest wrapper is a sort of jacket, made of coarse linen or loose crash; it must be double. Cut it to fit the form nicely, and to extend from the neck to the hips. There must also be an outer wrapper, either of flannel or unbleached drilling, something that will keep in the moisture; make it a little larger than the other. Both should be long enough to lap completely across in front. In applying the chest wrapper, wring the linen one out of tepid or warm water, dry enough not to drip, and adjust it quickly to avoid chilling; the patient can hold it together in front.

Then put on the outer wrapper, fit it snugly, and fasten at the edge with safety pins.

In lung affections, as pneumonia, bronchitis, asthma, and in the first stages of consumption, the chest wrapper is very useful. Feeble patients cannot always wear it, owing to imperfect reaction; though often a wet compress can be applied in front, covering the lungs, this being held in place by the dry wrapper. If chilliness is produced, a bag of hot water can be laid over the compress. Never keep on the chest wrapper until it dries out; and leave it off at intervals, letting the skin have the air. When removed, dry well with a coarse towel, and rub with the hand till the skin is in a glow. On leaving off the wrapper for a time, a good plan is to heat several folds of flannel very hot, and apply quickly over the lungs. Then place a bag of hot water (not too full, or it will be heavy) over the flannel to keep it warm.

In chronic diseases, the chest wrapper should not be too habitually worn. Better results are obtained by wearing it at intervals, say every night for a week, and then leave it off entirely for several days. If worn without intermission the skin becomes enfeebled, and the reaction is imperfect. Or if its use is continued much too long, a skin rash may make its appearance where the compress is worn, showing that the system is depurating unduly at this point. Where the reaction is rather feeble, a patient may be able to wear the chest wrapper in bed, hot bottles being used if there is chilliness. Or if on his feet, he can often wear it three or four hours during the middle of the day, when a longer period would be objectionable.

*Wet-Sheet Pack.*—Not every one is a fit subject for

the wet-sheet pack; neither can it be employed under all conditions. To take a pack with benefit, there must be a good determination of blood to the surface; the skin must not be chilly, nor the hands and feet cold. If there is severe congestion, whether of the head, lungs or other part of the body, the pack should not be given; the circulation must be fairly well balanced, and the vitality sufficient to insure a prompt reaction.

The following is the way to administer it: On a bed or lounge, have a mattress with a good sized hair pillow at the head. Over these spread a rubber sheet and a comfortable with its length across the bed, letting one side come well up onto the pillow. Over this lay another; or two, if the weather is cold. Then put on a white blanket in the same way, having it high enough at the head. A bottle of hot water must be ready, in case it is needed at the feet. Have also a basin of cold water near by, and in it a folded compress to lay on the head. Then take a sheet (thick linen if you have it) long enough to go nearly twice around the body, and wring it just enough to prevent dripping, out of water that is almost hot. The sheet will get sufficiently cool by the time it is spread on the bed. The patient being stripped and his head thoroughly wet, let him lie down on the middle of the sheet, throw his arms above the head, and separate the legs a little. Then bring up one end of the sheet, leaving enough of it at the side for the arm to rest upon, and tuck the lower half of it between the legs and feet. Let the upper half extend far enough over to come between the other arm and the body; if it is not long enough, a large towel may be used.

The packing must be so managed, that the skin does not touch the skin at any point; neither should it come in contact with the blanket outside. This done, let the

patient lay his arms rather loosely at the sides. Pull the other end of the sheet up over the body, and tuck it between the legs; the upper part of it should cover the front a second time, and wrap the arms completely. The sheet must never be drawn too snugly across the chest, as it would tend to congest the lungs and make the patient nervous, particularly if the lungs are weak. Or if the sheet gets too cold, the lungs will congest. Should this happen, wring a towel quickly out of hot water and lay it over them. Then having brought over the ends, fold the sheet snugly in at the neck and downward over the chest, so that no air can enter.

Now take one end of the *blanket*, bring it up over the lower extremities, and tuck it in rather tightly under them. Do the same with the other end; then take the upper portion of it, and bring it down over the shoulders, first one side and then the other, wrapping the chest and arms, and excluding the air. This leaves a double fold across the chest, which must be smoothly adjusted. The comfortables are managed the same way, and carefully tucked in everywhere, especially at the neck. The feet too must be looked after, and so well covered that no air can get in. Throw an extra wrap over them to insure warmth; and if they are still chilly, put in the bag of hot water; not next to the feet, but between the folds of the comfortables. If the covering over the body is not sufficient lay on another blanket, tucking it in well at the sides. All this must be done quickly; in much less time than it takes to tell it.

Finally, wet the head again, replace the compress, and throw up a window for fresh air. Then bid the patient rest—sleep, if possible; and either sit by his side or leave an attendant, who can brush away the flies, or do anything else that is needed. Generally the

patient does not like to be left alone. If he tires of one position, change it, or turn him on his side; have the packing loose enough to permit this. Should he become exceedingly restless, take him out of the pack. But before doing this close the windows, and make the room comfortably warm. Also have plenty of hot water for the bath that is to follow; it may be a quick pour; or the dripping-sheet. In fevers, the full bath is sometimes given. Care must be taken that the patient does not chill, in removing the packings and going to the bath.

In ordinary cases, the time to remain in the pack is about an hour, provided the patient rests well; though it may be longer or shorter according to the purposes for which the pack is given, and to suit the condition of the individual. For children, from twenty to thirty minutes is usually long enough. In fevers, where the object is to lower the temperature of the body, the pack may have to be prolonged until the heat is reduced.

The principal object of the wet-sheet pack, is to promote depuration through the skin. It is not necessary that the patient should sweat while in it, though he sometimes does so. If he remains comfortably warm through the pack, it is sufficient. If he sleeps, all the better. After the *bath*, which must be of short duration and given with good rubbing, the skin should react well. Let the patient keep rather quiet for a time; the treatment is of the heroic kind, and very little exercise is needed. Food should not be taken for at least an hour afterward.

When properly given, no treatment is more efficient than the wet-sheet pack. In acute diseases attended with fever, it is of special value for reducing the temperature. It is also serviceable in skin diseases, and

other chronic affections. It is an excellent means of cleansing the system when the latter is in a gross condition, or when there is any specific poison in the blood.

*Half Pack.*—This is sometimes called the chest pack, though trunk pack would be better. It is applied over the trunk, from the armpits to the hips; in other respects it is managed about the same as the full pack. A long Turkish towel may be used for wetting, and a piece of an old blanket will serve for the outside wrapping; the ends can be fastened with safety pins. See that the feet are warm.

The half pack is much more convenient to give than the full pack; and patients who are rather feeble, react better after it. This pack is serviceable in a great many cases in which the liver, stomach and bowels are affected; it may also be applied in some instances where the lungs are involved. Given hot, it is very beneficial when there is severe pain in the bowels. Sometimes matter is lodged in the intestinal tract which causes griping or cramps, and which must be removed before relief can be obtained. In these cases, full injections of tepid or warm water are usually administered; but the bowels may contract upon the offending substance, and hold it fast. Failing to dislodge it with enemas, a good plan is to apply the hot half pack, which is best done as follows: Wring half of an old blanket out of water as hot as can be borne, wrap it around the body, and cover with the other half which must be dry. Also put a bag of hot water over the painful part. This will generally give more or less relief; it will relax muscular contraction, and the fecal matter can be brought away by another full injection, given with thorough kneading. After the matter has been expelled, the pain will cease.

Let the pack remain on for a time; the patient being easy, will probably fall asleep.

This pack is really a warm or hot compress, extensively applied; and if very hot, it becomes a fomentation on a large scale. Given to relieve pain, for example when there are gall-stones, if hot does not relieve, open the wrapping and apply for a short time a compress that is cool or cold. Sometimes hot and cold alternately administered, will be more effective than hot alone.

After the half pack you may sponge the trunk with tepid water, and follow with brisk hand rubbing.

*Leg Pack.*—In this pack, the wet compress is applied to one or both legs. It may be hot, cold or tepid, according to the purpose for which it is employed; and it may cover the entire limb, or only a part of it. You can use a thick Turkish towel for wetting, this wrung so it will not drip. Then cover, not too tightly, with dry flannel to keep in the moisture. A good plan is to put the pack on at night; if it gets dry before morning, it should either be renewed or removed. When removed, sponge the part with tepid water, and dry well with a towel.

The leg pack ought to be more extensively employed than it is. It stimulates capillary circulation, and its derivative effects are excellent. It is of service in dropsy, inflammation, rheumatism, sciatica, and in numbness of the lower extremities. Varicose veins are said to be treated successfully by this method; and combined with tight bandaging, good results ought to follow. It has also been recommended for coldness of the feet and legs, as well as in various diseases of the throat and lungs.

In giving the leg-pack, the feet too may be enveloped. A wet compress applied to the soles of the feet and

covered with dry flannel, will help to break up a cold. Do this on going to bed, and make the compress thick enough to keep moist all night. Remove in the morning, and rub briskly with the hand.

*Dry Blanket Pack.*—The object of the dry pack, is to produce sweating. It is sometimes given to cure a cold; or to break up the “chills and fever.” When used for the latter purpose, it should be administered at least an hour before the chill comes on. It has also been employed in cases of gout, obesity, and rheumatism.

This treatment, which is pretty heroic, is not so much resorted to as formerly. Wrap the body in dry blankets, and put something hot at the feet; bags of hot water may also be placed at the sides and back. To prevent determination of blood to the head, the latter should be kept thoroughly wet with cloths dipped in cool or cold water. Hot drinks are also given, to start the perspiration; though if there is thirst, give cold water instead. Have the room well ventilated but comfortably warm, and keep the patient quiet.

As soon as there is free perspiration take the patient out of the pack, and avoid chilling him. Then sponge the surface with tepid water, or give a spray bath. Dry well with a towel, and apply friction with the hand till the skin is in a glow. Let the patient lie down and rest after taking the treatment.

*Sweating Pack.*—This is given the same as the dry pack, except that moisture is employed in connection with it. Envelop the patient in dry blankets; and before wrapping them about him put to his sides, thighs and feet and also in his hands, jugs filled with hot water, and covered with flannels wrung out of the same; or hot bricks may be used instead of jugs.



Apply to the head a cool wet compress, and give plenty of hot water or hot lemonade to drink. When the perspiration starts freely, the pack should be discontinued. Follow with tepid sponging, dry with a towel, and finish with hand rubbing or percussions.

This pack is given for colds; also for chronic rheumatism, biliousness, jaundice, obesity, and other diseases in which active depuration through the skin is desirable. Care must be taken to avoid chilling. The room, both for the pack and the bath, should be warm; and after the treatment, let the patient rest for an hour before going out.

*Fomentations.*—A fomentation is the act of applying to some portion of the body, heat and moisture combined. Take a piece of soft flannel and fold it to the size wanted, having several thicknesses. Wring this quite dry out of water as hot as can be borne, and apply it to the part affected; then cover with dry flannel to keep in the moisture, and also the heat. A better way is to protect the skin with one or two thicknesses of dry flannel; the wet one can then be put on much hotter. To save frequent changing, fill a rubber bag with hot water and lay it over the compress; there must not be too many thicknesses of dry flannel between it and the hot-water bag. Where much heat is required, the compress should be changed about every ten minutes; and in the absence of a hot-water bag, every five minutes is better.

The hotter the compress, the less frequently it will have to be renewed. A good way is to fold to the size needed, lay it in a basin, and pour boiling water over it; then lift by a corner, and transfer it to the middle of a dry towel. Wrap this around it lengthwise, and wring as dry as possible by twisting the ends of the towel.

Now lay a single thickness of dry flannel over the skin to protect it, put on the hot compress, and cover it with another dry flannel. By dipping the hands frequently in cold water they become less sensitive, and the hot cloths are more easily handled.

In giving a fomentation, time is saved by having two flannels for wetting, so that one can be prepared while the other is on. The compress is sometimes heated in a steamer, which saves the trouble of wringing. If no bag for hot water is at hand, one filled with hot meal, salt or sand may be substituted.

The fomentation is often employed in relieving pain; and the cases in which it will be needed, are almost endless. It is applied in neuralgia, earache, toothache, pleurisy, cramps, indigestion, dysentery, wherever there is severe pain in local parts; also in chronic cases, as torpid or congested liver, rheumatism, painful menstruation, etc. It is not generally used where there is much heat or inflammation.

When given to ease pain, the time required is from ten to twenty minutes, sometimes longer. The fomentation should be discontinued as soon as the pain ceases; when kept on too long, it is debilitating. If hot fails to relieve, a good plan often is to alternate with cold, applying each for a short time. Employed as a regular treatment in chronic diseases, from twenty to thirty minutes is about long enough. After fomenting, sponge the part quickly with tepid water, dry thoroughly with a towel, and then rub with the hand. In affections of the bronchia or lungs, as pneumonia, hot fomentations are of great service; and after giving them, hot dry flannels laid over the affected part, are very grateful and soothing. The same is true in gout, rheumatism and neuralgia; the dry hot flannels are much in demand.

*Poultices.*—The special virtue in these, consists in the application of heat and moisture. Almost anything that can be saturated with water and will retain it, is suitable for making poultices. The good effects that are generally attributed to them are not due to the ingredients that they contain, but to the fact that they hold heat and moisture; and in some instances, they are very convenient for that purpose. It may be easier at times to apply a poultice, than it is to foment. The heat is longer retained; and instead of frequently renewing the poultices, much time and labor may be saved by re-heating in a steamer, this being used for nothing else. After applying it, the poultice should be well covered with dry flannel to keep in the heat, and also the moisture.

The following are poultices in common use, and are easily made:—

*Bread and Milk Poultice.*—Take a loaf of stale bread (graham or white), cut it in slices, and pare off the crust. Then crumb fine, pour on boiling milk, stirring with a spoon till the mixture is smooth, and about the consistency of mush. While hot, spread this on a white cloth making a layer about half an inch thick, and large enough to cover the affected part. The cloth should be long enough to fold over the top, covering the poultice completely. Apply at once, and replace with another before it gets dry.

Water is sometimes used instead of milk; pour it boiling hot over the crumbs, and prepare as above. To make a poultice quickly, cut a thick slice of bread, remove the crust, and dip it in hot water; then lay it on a cloth, and apply immediately.

*Bran Poultice.*—Pour over the bran enough boiling water to make a mush, stirring meanwhile. Then half

fill a thin muslin bag with this mixture; tie it quickly, spread the bran evenly, and apply to the part. Renew the poultice often, in order to have it hot.

Instead of bran, cornmeal may be used; stir well to prevent lumping, and cook until smooth.

Where the skin is much inflamed, the poultice may be made of thick starch; it is smoother, and more soothing.

*Slippery-Elm Poultice.*—Take slippery-elm flour, pour boiling water over it, and form a mixture suitable for a poultice. Half fill a thin muslin bag, tie the end, and apply hot.

*Flaxseed Poultice.*—If seed is used (which many prefer) add boiling water, stir well, and cook to the proper consistency. Or you may take the flour, pour in the boiling water, and stir until thoroughly incorporated; the mixture should be perfectly smooth. Spread a half inch layer on a thin cloth, fold this over at the edges, securing the poultice, and apply while very hot.

*Mustard Poultice.*—When hygienic agents, as hot water, cannot be had, other things are sometimes employed. For example, cold extremities may be warmed by applying grated horse radish to them. Or in case of croup with no hot water at hand, a mustard plaster put to the feet will draw the blood there, and relieve the throat. Owing to its pungent quality, mustard calls the blood to the part and makes it hot; but if left on too long, it will raise a blister.

To make the poultice, mix ground mustard with cold water, forming a paste thick enough to spread with a knife. Hot water can be used for mixing, but it is not necessary. Spread the paste on a cloth, and apply it to the part. It will "draw" quicker if laid directly on the skin; but for a slower action, have a cloth between. If

mixed with the white of egg (no water), the poultice will be milder; or you may combine cornmeal with the mustard, for the same purpose.

The general rule as to the time of applying, is to remove the poultice when the skin reddens; better make the application repeatedly, than to produce a blister.

*Refrigeration.*—Cold applications as well as hot, may be employed in the sick room, and in many cases with equally good results. In emergencies, they are often of the greatest service. Dangerous hemorrhages may be checked by the application of ice, or ice-cold cloths frequently renewed. Inflammation, in the throat or elsewhere, may also be kept down and a fatal termination avoided. What is called the ice cap, is sometimes applied in inflammation of the brain; it is a double head cap, made of rubber or oiled silk, and filled with ice.

In nervous affections, as hysteria, chorea and tetanus, ice may be applied to the head or spine, and convulsive spasms arrested. In croup, diphtheria or putrid sore throat, scarlet fever, acute laryngitis, etc., ice is invaluable. Where there is extreme nausea, bits of ice frequently swallowed, will often relieve it; or these may be taken in inflammation of the stomach. Ice is also used to prevent the spread of erysipelatous eruptions. In surgery it is indispensable, both in checking hemorrhage and in keeping down inflammation. Freezing mixtures have been successfully employed, in stopping the growth of malignant tumors, as cancer; and felons may be arrested in their early stages, by freezing the part a few times.

To apply ice, wrap it in flannel, or enclose it in a rubber bag; dried bladders are very good for this purpose. There should be one or more layers of flannel

between the ice-bag and the skin. *Pounded* ice is often employed; it is easier to fold about the neck or other parts. Snow is good, but this is not always at hand. In many cases, the cold wet compress is better than ice; it is not so heroic. Great discrimination is required to employ ice judiciously, particularly in treating children, or persons with feeble vitality.

*Water Drinking.*—The question has been discussed, whether man is by nature a drinking animal. Outside of the tropics, persons who are in good health and have a correct dietary, will as a rule drink very little water. The juicy fruits and vegetables with which our tables ought to be supplied, contain a large proportion of water in their fluid constituents; so that water as a beverage is scarcely needed, especially at meals. But if the foods are highly seasoned, with sugar, salt, pepper, spices, etc., thirst will be created. The flesh of animals, which is not at all necessary as an article of diet, is stimulating in character, and produces a similar effect.

The habits of the individual have a great deal to do with the amount of water that is called for. Where one takes much exercise, particularly in a heated atmosphere, the body parts with its fluids rapidly, and these have to be replaced. Or if there are inflammatory conditions present, as in a fever, water will be needed to reduce the heat, and also to bear away the impurities that are in the system. Water is a most valuable therapeutic agent. By its aid the sewerage of the body in health is kept up, and in disease foreign matters are expelled. The amount of water that should be used in this way, will depend upon the habits and physical conditions of the individual; and these are almost as varied as the diseases which afflict mankind.

Where there is a foul state of the system, perhaps

with nausea and sick headache, the copious drinking of hot water will often give immediate relief. Or for cramping in the stomach, it may be taken to relax the muscular spasm, expel any gases that are present, and thus relieve the pain. But the habit of taking large draughts of hot water at stated intervals, and without reference to present needs, is both unnecessary and injurious. Its tendency is to stimulate the stomach to over activity, thereby weakening that organ and impairing its function. Hot water should be taken only when its use is indicated, and for a special purpose.

About seventy-five per cent. of the human body is water. It should therefore be abundantly supplied to all the tissues, and of the purest quality. Water is the best *solvent* known. The food that we eat, should contain enough of it to supply all the wants of the vital organism. In fevers, it is one of the best curative agents we have; it not only reduces the temperature, but enables the body to cleanse itself properly. By its use, impurities in the system are dissolved; and these, entering the general circulation, are expelled through the depurating organs. Where there is inactivity of the skin, liver, bowels or kidneys, the free use of water is advisable; and it is said to be a valuable aid in curing the tobacco and opium habits. It is a fact that the hygienic treatment, which of course includes a correct dietary, is about the only "sure cure" that there is for these habits. The craving and perverted appetite gradually becomes normal, and the natural instinct rejects that which is poisonous or injurious.

When water is needed, it is best to take it between meals, or at least half an hour before eating; though if the food on the table is highly seasoned, or exceedingly dry, it may be a choice of evils to drink water at the

meal time. But it should be taken in moderate quantity; also in *sips*, and not colder than ordinary well or spring water.

*Water Emetics.*—In the hygienic practice the agent employed to produce vomiting, is tepid or warm water, its temperature being 92° to 94° F. The amount required for this purpose, varies with different individuals. Begin by administering one or two tumblerfuls, and in a moment or two give another. Repeat this until there is vomiting. Pressure with the hand on the stomach from below upward when there is a feeling of nausea, will generally aid in producing emesis. Another way is to run the finger down the throat, or tickle it with a feather.

There is no danger of taking too much water, as it will either be thrown up by vomiting or pass into the intestines, and no harm will result. Where there is very great difficulty in making the patient vomit, a nauseating ingredient, as salt, mustard, goose grease, etc., are sometimes added to the water. These substances can do no injury, as they are afterward expelled from the stomach with its other contents.

*Enemas.*—Instead of giving purgatives to produce evacuations, injections of tepid or warm water should be employed. A purgative is supposed by many, to cleanse; to remove from the bowels something that is injurious. Let us see if it does this. To begin with, the drugs that are used for that purpose are generally far more hurtful than anything which they are intended to expel. Here is the proof of this statement. When purgatives or cathartics are administered, there is manifested against them an intense vital antagonism; so intense, that often the medicine is forced through the bowels at a rapid rate, and very little else is carried with



it. The drug with more or less mucus, is forcibly thrown out; and the fecal matter is left behind, impacted in the folds of the intestines. So that these supposed "cleansers" not only fail of their mission, but are themselves the object of extreme repulsion on the part of the vital instincts. The effect of purgatives, is to weaken the intestinal tract, prolapse the rectum, and produce pile tumors.

The best way to move the bowels and also the most thorough, is by means of injections of tepid or warm water, these being properly administered. Where there is obstinate constipation and the fecal matter has been long impacted, have the water as warm and use as much of it, as the patient can retain with comfort; from one to two quarts will probably be needed. Use a fountain syringe, and do not hang it too high; rub the tube with a little sweet oil or vaseline before inserting it. Then place the patient either on his back or the left side, and slightly elevate the hips. Inject the water slowly, and at intervals if necessary; more water can be taken when it is not thrown into the bowels too rapidly. Knead and shake them well after injecting it. Have the patient hold the water as long as he can; if there is difficulty in this respect, divert the mind by calling attention to something else.

A good way, particularly with infants, is to fold a napkin and press it firmly against the anus, immediately after the water is injected; this will aid in its retention. When, as in constipation, the bowels are not disposed to act, you may throw up a part of the water, and then knead (and shake) them thoroughly before injecting more. Should all these measures fail of the desired effect, repeat the enema and knead again. Perseverance will nearly always bring success, even in the most

desperate cases. Little by little the mass will be softened ; and if the bowels have not lost all their peristaltic action, they will finally expel it.

In extreme torpidity of the bowels, perhaps of long standing, it may be necessary to resort daily to the syringe, at least for a time; though strict attention to diet, exercise, etc., will do much towards restoring them to normal activity. As the general habits are corrected the evacuations will become more regular, and gradually there will be less reliance upon artificial methods. The use of the syringe should never be continued longer than is actually necessary. A good way to favor a return to normal conditions, is as follows: In taking the enema, use a smaller amount of water than usual, have it not too warm (as it is more easily retained), and if possible let it be absorbed. Then wait, one, two, or three hours or even longer, for the bowels to move. If there is no inclination throw up a little more water, and wait again. Continue this process, manipulating the bowels from time to time; if we can help them to help themselves, it is better than to depend upon the syringe. Besides, full injections often repeated, will in time weaken peristaltic action, and also distend the rectum.

Where there is a prolapsed condition of the lower bowel and its natural action has become greatly impaired, it is often difficult to secure a complete evacuation; and between times fecal matter will drop down into the rectum, and cause irritation. When this tendency exists, it is hard to keep the parts clean; and it may be necessary to inject a small quantity of water each night before going to bed, to remove any matter that is lodged there. Use as little water as will serve the purpose, and do not have it too warm.

If there is great emaciation, as when a patient is convalescing from a severe illness, the bowels will not have much power to contract or expel their contents, and we may have to aid their peristaltic action. This can be done by adding olive oil to the water, having it nearly blood heat before injecting it. Gentle manipulations of the abdomen are also serviceable. By giving attention to this matter until the bowels have in a measure regained their strength, it will prevent unnecessary straining, which tends to prolapse them.

In cases of fever, a little cold water thrown into the rectum will reduce the temperature of the body. Cool or cold injections repeated as needed, are often employed for this purpose. In diarrhœa and dysentery, a small amount of cold water injected and absorbed after each passage, is of service.

When there is severe purging of the bowels, as in cholera morbus, a good plan is to give a full injection of tepid or warm water afterward; this will cleanse the intestinal tract and leave it in a better condition. There is generally some offending substance which the bowels are trying to expel; and if there is vomiting and straining the liver throws out its bile, which continues to create nausea and a feeling of discomfort. A full injection given with gentle kneading will help to remove any irritating matter that remains, greatly to the relief of the patient.

*Washing the Stomach.*—An excellent way to keep the stomach clean, is to put nothing into it that does not belong there. By a strict adherence to this rule, the stomach will rarely need cleansing. When it does, there is a drain-pipe attached to the stomach—not an artificial one, but of nature's own making—through which foul materials can be removed from it, and conveyed by

peristaltic action out of the vital domain. A few glasses of hot water will not only dilute any offending substance that may be in the stomach, but it causes that organ to contract from above downward, and force the matter out through the bowels. Or the water may be given lukewarm, and in sufficient quantity to produce vomiting; in which case the contraction of the muscles will be reversed, and the matter thrown out through the mouth.

The plan of "sewering" just stated, is the natural one; and it may be a question whether as a rule, we can improve upon it. A common practice however among some physicians, is to do a great deal of what is called "washing out the stomach," this being resorted to in chronic gastric catarrh, and other diseases in which the secretions are abnormal. There may be cases requiring that kind of treatment, but they are relatively few. Admitting that there are such, the washing should not be too frequent. If the continued use of the syringe, as for constipation, tends to impair the function of the bowels, would not repeated washings of the stomach have a similar effect upon that organ? Washing the stomach may be good in an emergency, but the practice should not become a habit; and this remark applies with slight qualifications to injections, whether into the bowels or other passages.

*Flushing the Colon.*—There are cases in which flushing the colon is no doubt the best thing that can be done. Where there is intussusception of the bowels, it is sometimes necessary to fill not only the colon but the small intestines, with tepid or warm water. Also in obstinate constipation—especially where the injection is given for the first time—very full enemas may be required. But the habit of flushing the colon, every day for weeks and

months together, is a practice that cannot be recommended.

True, filling the bowels with tepid water, is certainly better than converting them into a medicine chest; the injury done would not be half so great. But why make a single organ do such an immense amount of depurating? Why call upon the bowels to do more than their share of the work? It is thoroughly unphysiological, and therefore hurtful. After long-continued flushing of the colon, this organ becomes so weakened that it cannot perform its function without the artificial assistance; its muscles have been stretched to the utmost so many times that they refuse to contract, and natural peristaltic action is out of the question. Moreover, the constant removal of the mucus which nature has provided to facilitate the passage of fecal matter, has exhausted the secreting follicles and left the membranes bare and harsh. Here we have another reason why natural evacuations have become next to impossible.

It is a mistake to resort to the syringe so frequently, and to rely upon it. It is a further mistake to use large quantities of water, when a smaller amount will answer the purpose. There have been many victims to this species of malpractice. Not a few have depended upon it so long, that the only thing left for them is to continue the habit, be the consequences what they may; and the worst of it is, that such perversion of natural function is absolutely unnecessary. It may be better to evacuate the bowels by this method, than to die from intestinal obstruction; but there is a way to assist nature without perverting organic functions.

It must also be added, that the habit of flushing the colon is a *weakening* process. It tells adversely upon the health of the individual; not immediately perhaps, but

eventually. Persons with vigorous constitutions may not perceive it at once; but those who have feeble vitality, may have their health utterly ruined.

*Local Douches.*—Local douches are employed for cleansing the larger tubes or canals of the body which open externally. The mucous membranes that line them sometimes become diseased, causing abnormal secretions from their surfaces; and occasional douching with tepid or warm water is necessary, in order to keep them clean. This form of treatment is frequently applied to the rectum, vagina and urethre, as well as to the nose and ear.

The douche is of service in treating nasal catarrh, and abscess of the ear and nose; also in removing hardened wax, or foreign bodies and insects, from the ear passages. Tepid or warm water is generally used in giving these douches. Fill or partly fill a fountain syringe and do not hang it too high, as the stream of water must flow gently to avoid injuring the parts. In treating the ear, if the water is forcibly injected the hearing may be permanently impaired or lost. Or in giving the nasal douche, a little carelessness may force the water into the Eustachian canal and destroy the hearing.

The temperature of the nasal douche, should be such as will cause the least irritation to the mucous membrane. To cleanse more thoroughly, salt is sometimes put into the water, and after using it the parts may be well rinsed. Avoid too much force in injecting, and caution the patient not to swallow, for fear of forcing the water back into the ear.

A quick douching with very hot water, is often given to arrest hemorrhage; it should be hot enough to slightly shock, but not to burn. Injections of cold water are also employed for the same purpose; the physician must

decide which is best, in a given case. The hot douche is sometimes prescribed for nosebleed.

In *vaginal* douches, great harm may be done by the habitual use of water that is too warm; or by taking hot douches when they are not needed. These, if long continued, tend to weaken the parts, so that they lose the tone and elasticity which naturally belongs to them. Besides, in using so much hot water, the mucous membrane is stimulated to over activity; it throws out its secretions too freely, and in time the follicles are exhausted. The mucous surface is also robbed of its lubricating fluid, and it becomes either dry and harsh, or tough like a piece of leather. Often the muscular fibres of the vagina are weakened, causing a prolapsed condition of it. Heat is good in emergencies, but it should not be abused.

The *uterine* douche has been much employed of late; but it should never be resorted to, when other and simpler methods of treatment will do equally well. When given, it requires the exercise of great care and good judgment. Not a few lives have been sacrificed by administering it injudiciously. The fountain syringe or its equivalent should always be used; and the nozzle should have several small openings on the side, giving out lateral and return currents, rather than one or more holes at the end throwing direct streams. The force of the stream should not be too intense, in any of these douches.

*Gargles and Sprays.*—When the throat is hot to the touch, feverish, or there is tickling from inflamed conditions, a gargle of hot or cold water is often of great service. When the hot does not relieve, try the cold; the one or the other will generally soothe. Water, properly applied, makes the best of gargles; though glycerine,

lemon juice, listerine or other substance, may be added to it.

For a sore throat, the gargle and spray are sometimes used alternately. A spray that is frequently administered, is made by mixing four or five drops of carbolic acid with three tablespoonfuls of water; and to this may be added, one tablespoonful of glycerine. The mixture can also be used as a gargle. If this preparation has any special advantage over pure water, it is because the carbolic acid is so distasteful that it produces gagging; in other words, there is rigid contraction of the muscles of the throat, and the latter is rapidly cleared of its phlegm. By adding the glycerine, which tends to soothe, the mixture is better tolerated. This treatment should be combined with fomentations to the throat, the wet compress (hot or cold), the hot foot bath, etc. A correct diet is also invaluable.

#### THROAT APPLICATIONS, WASHES, ETC.

*Slippery Elm Tea.*—Pour boiling water over bits of slippery elm bark; or the powdered may be used. Then cool and strain; and if desired, add a little lemon juice. Take in sips when the throat is rough or inflamed.

*Flaxseed Tea.*—To one large tablespoonful of flaxseed (not ground), add one pint of cold water. Then bring to a boil, and simmer till the mixture is sticky. Strain, and while hot add half a teaspoonful of sugar, and the strained juice of one lemon. Stir well; when cold, it is ready for use. This tea taken in sips, is very soothing to a sore or inflamed throat.

*Gum Arabic Water.*—Dissolve an ounce of clean gum Arabic in a pint of boiling water, add the juice of one lemon, and strain. Little sips of the mixture will



soothe an irritated throat, and often prevent coughing.

*Borax and Glycerine.*—Take a teaspoonful of powdered borax, and mix thoroughly with two tablespoonfuls of glycerine. This may be used for sore mouth in infants. After nursing, cleanse the child's mouth with a soft cloth and pure water; then apply the borax and glycerine.

*Tannin, Glycerine and Water.*—Mix a level teaspoonful of tannin with a tablespoonful of glycerine; then add two tablespoonfuls of pure water; shake well, and strain. Good wash for sore mouth or sore throat.

*Glycerine and Water.*—To half a pint of soft water add a tablespoonful of glycerine, and shake well. After washing the hands with castile soap and making them clean, apply the glycerine and water; this done daily will keep the skin soft and prevent chapping.

The above mixture may be used in croup, or for ulcerated sore throat.

*Borax and Water.*—Another solution good for chapped hands, is made by dissolving a teaspoonful of powdered borax in a pint of water, and adding two teaspoonfuls of glycerine. Apply daily for sunburn; a little lemon juice may be added.

*Bran Wash.*—Soak a pint of bran in two or three pints of water for an hour, or simmer half an hour. Strain, and use to wash the hands; it will make them soft. A little oat meal soaked in water, serves a similar purpose.

*Bicarbonate of Soda and Water.*—Put bicarbonate of soda into enough boiling water to dissolve it. This is used to allay itching of the skin, as in eczema; either bathe the parts with the solution, or apply compresses wet in it. Also for burns, or softening the skin when it is thickened.

*White-Oak Bark Tea.*—Into a quart of water put two tablespoonfuls of crushed white-oak bark, boil half an hour, and strain. Or you may get the pulverized bark at the drug store, using the same quantity. Limbs or other members that have been frozen, should be bathed in it. Also wet a soft compress in the fluid, lay it over the affected parts, and cover with a dry cloth.

*Unguents.*—A number of substances are used as unguents; vaseline, olive oil, cocoanut oil, almond oil, etc. Olive oil if pure, is excellent; but being fluid at ordinary temperatures, other oils are often employed, particularly vaseline.

A good unguent or salve for domestic use, is mutton tallow prepared without salt, and kept in a cool place to prevent its becoming rancid. It is good for sore lips, cracked hands, or a chafed skin.

*Tooth Powder.*—Beware of powdered pumice stone, or any preparation which will destroy the enamel of the teeth. One of the best tooth powders, is made by mixing one part precipitated chalk with two parts carbonate of magnesia. Flavor with wintergreen, peppermint, or cinnamon.

#### DISINFECTANTS.

Disinfection is the act of destroying certain poisons or impurities—sometimes called miasmata—either by the sun's rays or in some other way. These poisons or impurities may be in the air, the clothing, the house, its furnishings, etc.

A *disinfectant* is any agent or substance that will prevent the formation of such poisons, or destroy them after they are formed. An *antiseptic* (which is generally included in the disinfectants) is anything that will prevent or arrest putrefaction or decay.

The following disinfectants are in common use:

*Sunlight.*—Sunlight is regarded by many, as the best disinfectant known. Combined with an abundance of fresh air—thorough ventilation—it promotes health. It supplies one of the greatest of the life-giving agents, and in so doing arrests the progress of disease. The healthy growth of plants and animals is dependent upon it. Sunlight should be admitted without stint, into every home, hospital and infirmary.

*Dry Earth.*—This is a cheap disinfectant, and also one of the most efficient. The use of the dry-earth closet is well known. Dry, powdered clay is said to be the best. Earth if wet, will not disinfect. It is stated by some writers, that the disinfecting property of dry earth is owing not merely to its porosity, but to the presence of animalculæ in it, these consuming any putrescent matter with which they come in contact. In country places where there is no regular system of sewerage, dry earth should be freely used in all the privies.

Sand is worthless, as a disinfectant. Dry ashes are sometimes used, though they are not as good as dry earth.

*Charcoal.*—Charcoal, either pulverized or in lumps, will absorb foul gases; when finely pulverized, it takes them up more rapidly. After it is thoroughly saturated with these gases, it can absorb no more; and if exposed to the open air, it will give them out again. By such exposure to sweeten it, the same charcoal can be used repeatedly; it is better however to renew it. When wells or cisterns become foul, the water can be purified by lowering into them a sack filled with bits of charcoal. This material is used in making filters, refrigerators, etc.

A small piece of charcoal dropped into a kettle of

boiling cabbage or onions, is said to absorb the gases that are given off, and prevent offensive odors.

*Lime.*—A very good disinfectant, is freshly burned or unslacked lime. It absorbs moisture and gases, and may be used in rooms and cellars that are damp or musty. Shallow vessels filled with it, are best.

*Chloride of Lime.*—Put a pound of chloride of lime (always fresh) into a gallon of water, and stir well; then settle or filter. Set this away in bottles, tightly corked. When wanted, take one quart of the solution to four quarts of water, and use at once.

Chloride of lime is excellent in the sick room; bedding or clothing soiled with the discharges of the patient, may be cleansed with it. Or nurses who are employed in cases of infectious disease, can wash their hands with it.

Chlorine gas is often employed as a disinfectant. Rooms that have been occupied by patients suffering from diphtheria, scarlet fever or other infectious disease, may be purified by its use.

Brimstone or sulphur is similarly employed. For a room of ordinary size, take from two to three pounds of brimstone, and burn it in an old iron pan or kettle which contains live coals. Close the room tightly, and continue the fumigation at least twenty-four hours. Then ventilate thoroughly for a day or two; also scour the walls, and repaper. Carpets and other furnishings if not burned, must be left in the rooms during the fumigation.

*Copperas.*—Another name for this, is sulphate of iron. Being inexpensive, one can use it without stint; though it requires care in handling, as it discolors porcelain and other materials badly. It is employed in disinfecting drains, sewers, privies, etc.; also for vessels in the sick

room containing urine or excreta. The kitchen sink may be sweetened with it; or stables that are foul.

Dissolve a pound of the copperas in a gallon of boiling water, and add to this two ounces of carbolic acid. For water closets, one to two quarts daily ought to keep them in good condition; and for sink or drain pipes, a smaller quantity will suffice.

Permanganate of potash is also employed for disinfecting vessels in the sick room; it is much more expensive than copperas. To prepare for use, dissolve one ounce of the potash in three gallons of water.

Platte's Chlorides are too well known to require special mention. They are already prepared, and are not very expensive.

*Disinfection by Heat.*—Bedding or clothing may be thoroughly disinfected, by heating in an oven for two or three hours. Do not put too much fabric in at one time, and have the temperature about 220° F.

Exposure to a hot sun in the open air, is also a good method of disinfecting. This may be continued for several hours, and repeated day after day.

*Hot Water.*—Water heated to the boiling point, 212° F., is a very good disinfectant wherever it can be employed; for example, in cleansing surgical instruments, preparing dressings, etc. It is also useful in disinfecting bandages, towels, aprons, underclothing, night-dresses, sheets, pillowcases and other bedding. Almost every kind of micro-organism can be destroyed in a short time, either with boiling water or hot steam. Moist heat will kill germs much more readily than dry heat.

*Antiseptics.*—Many writers scarcely discriminate between a disinfectant, and an antiseptic; though the latter is generally included in the former. Various substances are employed for either purpose. Among the antiseptics

usually recommended, are such acids as carbolic, muriatic, nitric and sulphuric. Chloride of sodium or common salt possesses aseptic properties; so do nitrate of potash, chloride of zinc, etc.

Listerine has been extensively introduced as an antiseptic, and has everywhere secured favorable comment.

As a wash for the gums, there are many preparations employed; among these are borolyptol, tincture of myrrh, and various essences of peppermint, cinnamon, etc.

#### ELECTRICITY.

The use of electricity as a therapeutic agent, is well known. The forms generally employed in medical practice are the galvanic, the Faradic, and the static. The static is produced by friction on glass or other electro-negative substance, and is less used than either of the other two.

Galvanic electricity is generated by chemical reactions which take place between two metals, as zinc and platinum, these being immersed in nitric acid or other fluid; though carbon may take the place of platinum. A galvanic battery is of any strength, according to the number and size of the cells that it contains. It is used for generating heat; and in surgical cases the galvanocautery is much employed.

Faradic electricity is produced by passing the currents of a relatively weak galvanic battery through a long coil of insulated wire arranged around an iron bar, and termed the helix. Or there may be several coils, one outside the other, these giving a higher degree of intensity. The current from a faradic battery is sometimes called the induced or interrupted current. Its strength is regulated by the number of cells which

the battery contains, and also the length and number of the coils in the helix. There are two poles to every battery, the positive and the negative; these are connected with plates, sponge-holders, etc., called electrodes, which are used in giving treatments.

*Therapeutic Value.*—Electricity is much employed in treating the sick, particularly in chronic diseases; though every individual is not a fit subject for it. The same may be said, however, of many other forms of treatment; the condition of the patient must always be taken into account, before deciding what the treatment should be. That which would benefit one, might greatly injure another.

There is nothing mysterious about the effect that is produced by electricity, when used as a curative agent; but the claims that are sometimes made for it, that it imparts strength to the patient, increases vitality, and so forth, are all of them false. Electricity does its work in a rational way; very much as we get certain effects by the use of water, and other hygienic appliances. Properly administered it stimulates activity in a given part, increases capillary circulation, and sends the blood to the various organs and tissues of the body as it is needed. In every case of disease, the circulation is unbalanced; there is too much blood in one part, and too little in another. In the affected organs there is often stasis or inaction; they are congested; their functions are deranged, and the whole system suffers.

By the use of electricity the fluids of the body can be set in motion, congestion relieved, and balance restored to vital action. Hence its employment in chronic cases, especially those of long standing, where the organs are extremely torpid and the blood circulates in them slug-

gishly. It is of great service in neuralgia, rheumatism, affections of the liver, spleen, or kidneys, and in constipation. By stimulating the circulation of the blood it promotes depuration, and aids the system in ridding itself of impurities. It may also be used in the reduction of tumors or other abnormal growths.

In uterine diseases it is much employed; not only for relieving congestions and reducing inflammation, but as a means of restoring displaced organs to their normal position. Electricity, by producing muscular contraction, aids in replacing the uterus and other organs, and thus affords relief. Cases of floating kidney, if not of too long standing, may be benefited by electrical treatments. In paralysis of the bladder, they are also helpful.

*Rules for Administering Electricity.*—In the employment of this agent, very few rules to which there are no exceptions, can be given. Special conditions will require special methods, these being learned only by practice. A general rule in the use of electricity is, that the current which flows from the positive to the negative pole of the battery, should follow the course of the nerves in the body. Another rule with few exceptions is, that a treatment applied to a particular part should be of short duration, say from five to ten minutes. A third rule which should always be observed, is, that as some individuals are more sensitive than others to the effects of electricity, the treatment given them should be mild in character, and not continued too long. There is need of great discrimination, in the use of this agent. Without experience and good judgment, much harm can be done with it. It is not a thing to be placed in the hands of the ignorant and inexperienced.



Treatment by electricity may be local, derivative, or constitutional, to meet the requirements of the case. The time employed in giving it will be longer or shorter, owing to the conditions that are present. In a general treatment, the time may range from ten to forty minutes. The particular method of applying this agent will vary, according to the effect that it is intended to produce.

For general faradization, a good way is to seat the patient on a chair with his feet in tepid or warm water, and place under them a plate connected with the negative pole of the battery; the plates are usually covered with coarse linen. Then put the positive pole to the base of the brain, or back of the neck. In treating one who is sensitive to electrical currents, a better way is for the operator to place his left hand in connection with the positive pole, and with his right hand apply gentle friction to the back and sides of the patient's neck. Make the application say seven to ten minutes; then treat gently down the length of the spine. Repeat this a few times, extending the strokes (below the shoulders) to either side of the spinal column; then pass the hand over the region of the liver, spleen and kidneys, and treat from three to five minutes.

Make a similar application in front, to the chest and abdomen, continuing it the same length of time; considerable force can be used in giving this treatment. Follow with the hand down the thighs and legs, for two or three minutes; then finish by again placing the positive pole at the base of the brain, and running the current five minutes. The entire treatment should not consume more than thirty to forty minutes.

When there is not sufficient strength to sit up let the patient lie in bed, and place at his feet the plate con-

nected with the negative pole; it should be encased in wet linen, the bed being protected from moisture with an oil-cloth. Then apply the other electrode to the back of the head, the neck, or high up between the shoulders. After ten minutes remove from its position, substitute the sponge-holder, and treat down the spine and other parts of the body, as already described; this should be done in such a way as not to exhaust the patient.

In giving a treatment, always avoid placing either electrode on parts of the body that are very sensitive. Where there are bones near the surface, as in the forehead, the electrical current if applied should be exceedingly mild; it is better also to administer it through the hand of the operator, as per instructions already given.

For local Faradization, no very explicit directions can be outlined; the application must be made to suit the requirements of the case. As a rule, mild currents are better than strong ones, particularly with nervous patients; much harm is sometimes done by using currents that are too strong. Another important rule, is not to continue the treatment too long; with few exceptions, short applications frequently repeated, are much more effective than long ones at greater intervals.

Local treatments with electricity, are often followed by a general treatment, both being of relatively short duration; this leaves the circulation in better balance, and is soothing to the patient.

Treatment by electro-puncture and the galvanocautery, to say nothing of the X-ray, should never be attempted by one who has not had special training in their application. Serious injury is liable to result from their use in the hands of an unskilled operator.

## MOVEMENTS, MASSAGE, ETC.

Years ago, hand rubbings done in a scientific way, were spoken of as "movements"; and that particular form of treatment which about 1813 originated with a Swede named Peter Ling, was called *Swedish* movements. This treatment was introduced into several European countries, and finally into the United States. It has been extensively practiced in England, particularly in the hydropathic establishments which are very numerous there. It consists of rubbing, kneadings, slappings, percussions, strokings, etc.; there are also twisting movements applied to the arms and legs, chopping, and so forth, all done in the most skillful manner.

Early in the last half of the nineteenth century, George H. Taylor, New York, invented machinery for giving mechanical vibrations, rubbings, etc., which were intended, to some extent at least, to take the place of hand manipulations. Taylor's machinery is used in most of the larger sanitariums throughout the country; though the hand movements under the name of *massage*, are far more extensively employed, not only in health institutions, but by private individuals. Treatment by massage has for years been practiced in France, Germany, and other European countries, as well as in the United States. It consists of hand manipulations, variously applied; the most common of these are kneadings, percussions, strokings, and vibratory movements. In what is called *pinching* massage, the operator takes up a particular muscle or set of muscles, and with the tips of the fingers and also the whole hand, he manipulates them very thoroughly. The process is continued, until it embraces all the muscles or parts that are to be treated.

*General Rules for Massage.*—Like every individual form of treatment, whether with water, electricity or other hygienic agent, there is a right and a wrong way to administer it. In no two methods of hand manipulations, is the *modus operandi* the same; though there are certain general principles which should be observed in each. A most important rule is, in cases of extreme weakness or exhaustion, *never to over treat*. Give the manipulations neither too vigorously nor for too long a time, and after treating let the patient rest or sleep.

Another rule, equally emphatic, is to treat in such a way as to accomplish the desired result. This needs judgment, as well as muscle; without discretion, endless mistakes may be made. A feeble patient requiring the most gentle handling, may be rubbed and pounded and slapped, until his strength is all used up, the treatment doing more harm than good.

The object sought in giving massage or other hand manipulations, is to effect a change in the system; we must draw the blood away from congested organs, and direct it to the surface of the body; warm the *extrémities*; restore *balance* to the circulation. Any treatment that does not do this, or tend in this direction, fails of its mission. Some novices have the idea that a particular routine must be gone through with, irrespective of physical conditions. It is a mistake to suppose that all patients can be handled alike; the treatment should not only vary to meet special requirements, but it should take into consideration the amount of vital force that the patient possesses. The great danger is in doing too much, especially where there is not strength for good reaction.

As a general thing, the kneading or other manipula-

tion should follow the course of the nerves, both in the limbs and the trunk; and the rubbings last given, should be applied to the extremities. A rule that works well in practice, for treatments that are general rather than local, is to commence with the head and gradually descend to other parts. Following the head take the neck, then one arm (beginning at the shoulders, and proceeding to the tips of the fingers), and then the other. In kneading the arm grasp it high up near the shoulder, and in such a way that the blood will be forced downward along its arteries, and into the hand and fingers, leaving them in a glow.

This completes the upper extremities. Next, take the trunk and go from the neck to the hips, thoroughly manipulating the liver, stomach and bowels. That done, begin with the back, and proceed in a similar manner; knead the shoulders and then move down the spine, rubbing well on either side of it. Be careful not to injure the kidneys, or loosen their attachments; and if the end of the spine is sensitive, do not handle it roughly.

Now take the lower extremities, a leg at a time, and rub from the hip downward, giving thorough kneading as you go along; do full justice to the knees, and also to the calves of the legs. The ankles should come in for an extra amount of manipulation and twisting; if properly done, these parts will be strengthened. Then finish with the feet, taking one at a time. Knead each very thoroughly, including the toes; and if there is any tendency to cold extremities, place the foot between the two hands, and give brisk surface rubbing. End with slaps on the soles of the feet, making them look red. The object in giving these manipulations, is to draw off the surplus blood from congested organs,

and direct it into channels that are relatively depleted; this leaves it in the extremities, and in the surface of the body.

Along with the kneadings, there are certain circular and vibratory movements that may be given; these are particularly beneficial over the shoulders, and in treating the abdomen. After the rubbing, kneading, etc., follow with percussions. Let the patient lie with his face downward, and apply the slappings first near the head, then across the shoulders, over the sides, and down the spine; then over the hips and down the legs, ending with the feet which must not be slighted. Last of all, come the stroking movements. If the patient is able to bear it, these may be given with considerable pressure, especially over the legs. Repeat the strokings two or three times, making them lighter as you go along, with very gentle touches at the end.

If the movements are properly administered, the surface should be warm; the patient should also feel soothed and quieted, and inclined to sleep. This suggests another rule in giving movements; to get the best results, the patient if nervous or tired, should neither talk nor be talked to. He ought to remain perfectly passive, both in mind and body.

An operator who disregards these rules, will not accomplish so much. For example, if in giving a treatment he commences by kneading the tips of the fingers, gradually proceeding up the arm, the blood will be forced from the extremities toward the trunk. The same will be true in manipulating the feet and legs; if he begins with the feet and ends with the hips, the blood will recede from the nether extremities; and before he is done, the feet may become so cold and chilly as actually to cramp. Nor will all the kneading that

he may afterward give, around the heart and the great arteries, atone for this blunder. If however the patient is rather strong and vigorous, the effect will not be so marked. But take one that is feeble, with very little vitality, and the result produced will speak for itself.

Some persons have a real talent for giving hand rubbings; they take to it naturally. Others have the greatest difficulty in learning the art; they are awkward in manipulating, and it will require a long time for them to become proficient. Rather a fleshy hand and not too hard, is best; and its owner should be quick to observe, faithful in his work, and he should love it. A kindly disposition is also a great advantage. Some persons who have never had any instructions, will rub and knead far better than others who have been faithfully drilled. There is a great deal in knowing how to rub deep enough, and at the same time avoid giving pain. There is a sort of rolling motion that should be used in treating the legs and arms, where there are sharp bones; by careful rubbing the tender parts are shielded and protected. All jerky or angular motions must be avoided; every movement should be gentle, thorough, and correctly applied.

*Local Manipulations.*—These are of service in the treatment of special organs that are diseased, and also in strengthening muscles, and parts that are weak. For example, in uterine displacements, there are certain manipulations (as well as pelvic gymnastics) that are specially applicable to the case. Properly given, these movements strengthen weak muscles, increase their contractility, and tend to restore the organs to normal position. The character of the rubbings must vary, according to the particular kind of displacement from which the patient suffers; and all the pessaries, “sup-

ports," medicaments, etc., etc., can never take the place of hand manipulations properly applied, and in connection with other hygienic agents.

Movements may be locally administered to almost any part that is weak or disabled; as a wry neck, sore throat, curved spine, or contracted chest; also to a congested liver, prolapsed bowels, shriveled limbs, bow legs, weak ankles, distorted feet, etc. Or they may be given in local paralysis, for the relief of pain, or to quiet the nervous system. Another effect of movements, is to increase nutrition in the parts to which they are applied. This is of special value where the patient is unable to take exercise; the muscles waste away for lack of use. Not only so, the tissues are unable to throw out promptly the waste matter which ought to be expelled from day to day. If the patient is too weak to exert himself, there is all the more need of passive exercises, which he will get in these movements.

*Derivative Treatments.*—When parts are congested, as the brain, lungs, liver or other internal organs, derivative treatments are of great value. Kneadings given to the extremities will draw the blood away from the engorged vessels, and distribute it elsewhere. It is in this way that pain is relieved and the nerves quieted. Whenever the blood vessels are over-distended, they press upon the accompanying nerves and produce pain. But by drawing off the surplus blood the pressure is removed, and the pain disappears.

Even patients that are very sick and confined to their beds, can have the benefit of hand rubbing; it is an untold blessing to them. Often too when they are extremely weary from lying in bed, their tired muscles can be rested, and sleep will follow. Many an



invalid sinks and dies, for the lack of just this kind of treatment. Hand manipulations judiciously applied, will stimulate the nutritive process in the various tissues, strengthen parts that are weak, and give tone to the entire system. They also relieve congested organs, and distribute the blood to other portions of the body. By such methods, balance in the circulation is restored, morbid manifestations disappear, and the patient gets well.

#### DRINKS IN FEVERS.

In fevers, the leading indications are to reduce the temperature of the body, and to cleanse the system as rapidly as possible. One way of doing this, is to give the patient plenty of water to drink, having it hot or cold as he prefers. If wanted hot, boil it quickly; when left to simmer too long the air is expelled, and the water will have an insipid taste. Should ice-water or other cold beverage cause pain in the stomach, lay a hot compress over it; you may also give sips of hot water.

Some patients do not incline to drink much; there is often a bad taste in the mouth, and the water has an unpleasant flavor. For this reason, other simple beverages must be devised. You can make these with some of the grains, or grain preparations; also with the juices of fruits, raw or cooked, using a porcelain or granitized kettle. Dilute the juice to suit the taste, and if it is very sour, a little sugar may be added.

In preparing these beverages, the water should be soft and pure; when hard or of doubtful quality, you must boil and settle it.

*Hot Lemonade.*—Roll the lemon, cut it in halves, and squeeze the juice into a tumbler; or you may re-

move the rind, and use the lemon-squeezer. Fill up with hot water, strain, and serve with little or no sugar.

*Cold Lemonade.*—Squeeze and strain into a tumbler the juice of half a lemon; then add a teaspoonful of sugar, stir well, and fill the glass with cold water. If too sweet add more juice, and more water if needed. Flavor with strawberry or pine-apple, if it is liked.

*Orangeade.*—Make the same as cold lemonade, using good tart oranges and less sugar. Dilute to suit the taste. Oranges and lemons mixed, are sometimes liked.

*Irish Moss Lemonade.*—Soak one-fourth of a cup of Irish moss in cold water, till it begins to soften. Then wash thoroughly, freeing it from sand or other impurity. Put it into a granitized basin, pour over a pint of boiling water, and simmer slowly for half an hour. Strain, add the juice of one lemon, and sweeten to taste. Serve hot or cold, as preferred.

*Currant Juice.*—Allow nearly a quart of water to one of currants stripped from the stems, and add two tablespoonfuls of sugar. Heat slowly almost to boiling, in a granitized kettle; then skim. Simmer five minutes longer, strain through a cloth, and cool. Dilute with water if necessary; and you may add more sugar if needed. Barberries may be prepared in the same way.

*Raspberry and Currant Juice.*—Mash together a pint of red or black raspberries, and a quart of red currants; pour over two quarts of cold water, stir well, and strain. Then add two tablespoonfuls of sugar, more or less to suit the taste, and cool on ice.

*Strawberry Juice.*—To one quart of capped strawberries add half a pint of water, and a tablespoonful of sugar. Put into a granitized kettle, heat slowly to

boiling, and skim. Then simmer five minutes, strain, and cool. If too rich, dilute with water.

*Grape Juice.*—Prepare good sound grapes not over ripe, and allow one pint of water to three of fruit, picked from the stems. Wash thoroughly, heat very slowly, and remove the scum as it rises. Then simmer five minutes, and strain through a clean flannel or cheese-cloth. Heat again almost to boiling, take from the fire, and cool. Make as wanted, or open a fresh can; this juice changes rapidly on exposure to the air.

*Gooseberry Juice.*—Select nice berries fresh from the garden, and about two-thirds ripe—pale red berries, not very soft. To a pint of these picked and washed, add the same amount of water and two tablespoonfuls of sugar. Then heat to a boil in a porcelain or granitized kettle; skim well, cook five minutes, and strain through a cheese cloth. Let the juice stand till cold and drain off the clear pink fluid, leaving the thicker portion in the bottom of the vessel. If necessary, dilute with water before serving.

*Red Raspberry Juice.*—To one quart of fruit allow a pint of water, and a tablespoonful of sugar; stew slowly five minutes in a porcelain or granitized kettle, and strain through a cloth. Dilute with water if too strong, and give to the patient when cold.

*Black Raspberry Juice.*—Make as in the preceding recipe, using little or no sugar, and a trifle more water. Blackberry juice may be prepared the same way.

*Uncooked Fruit Juices.*—A pleasant beverage may be quickly made by expressing the juice from currants, strawberries, raspberries, cherries, or other small fruits; these can be diluted with pure water, and moderately sweetened; they may also be flavored with pine-apple.

*Mixed Fruit Juices.*—Take equal quantities of cur-

rants and raspberries, or several varieties of fruit can be mixed together. Add the same amount of water that there is of fruit, and express the juice; it may be raw or cooked. If cooked, cool before serving, and sweeten to taste.

*Apple Juice.*—Pare, core and quarter rich juicy apples, as pippins, with a fine subacid flavor, and pour over enough water to make plenty of liquid; a few slices of quince may be added if the flavor is liked. Then simmer slowly one hour, or till the fruit is quite soft; when cold, drain off the juice. No sugar is required, unless the apples are very sour. Crabapples may be prepared in the same way.

The juices of canned fruits diluted with water, make good drinks for the sick, provided they are not too highly sweetened.

*Apple Tea.*—Scrape tart juicy apples, and cover with boiling water; or you may pare them, and slice thin. If very sour, add a little sugar. Put a plate or saucer over the fruit, and let it stand till cold; then strain.

*Dried Apple Juice.*—Take dried apples, rather tart and rich in flavor, adding water enough to make them quite juicy. Stew slowly and without stirring till tender, remove the lid, and let the fruit stand till cold. Then drain off the juice, diluting with water if necessary. No sugar is needed.

*Dried Peach Juice.*—Select good fruit rather tart, and free from gum; the peeled peaches are best. Prepare and stew as for sauce, allowing plenty of water for juice when done. Strain, cool, and dilute to suit the taste. Tart dried plums, or tamarinds, may be used instead of peaches.

*Tamarind Water.*—Soak tamarinds an hour in cold water; then pour it off, strain, and serve. Good dried

apples rather tart, may be steeped in the same way; so may dried peaches.

*Cranberry Tea.*—Take ripe cranberries perfectly sound, wash thoroughly, and pour boiling water over them. Let the mixture stand till cold; then strain off the water, and sweeten to taste. Dried sour currants or dried red raspberries, may be similarly prepared.

*Pineapple Tea.*—Pare the pineapple carefully, removing the woody portions; slice thin, and chop fine. Cover with boiling water, and let it stand two or three hours, stirring occasionally. Then strain, and add a little sugar if liked. You can also flavor with lemon.

*Oat Water.*—Into two quarts of cold water stir a good handful of fresh oat meal. Let it stand twenty minutes or longer, then serve. If the water is hard it must be boiled, cooled and settled, before using.

*Barley Water.*—Over a third of a teacupful of fresh pearl barley pour half a pint of boiling water, and let it simmer five minutes. Then drain off and throw away this liquid. Now add two quarts of boiling water, and cook till it is reduced one-half. Strain, and use without sweetening.

*Toast Water.*—Take graham bread that is two or three days old, but perfectly sweet; the unleavened is best. Cut it in thin slices, and toast slowly and evenly till thoroughly dry; have it nicely browned, but not scorched. Then pour over pure cold water, let it stand an hour, and drain off for a drink. Serve unsweetened. White loaf bread (stale, and home made), though not as good, may also be used. If this drink is made with hard water, you must first boil, cool and settle it.

Another way is to fill a small pitcher with boiling water, and drop the slices of toast into it; then cool, and set in the refrigerator till wanted.

*Grain Tea.*—Parch wheat, corn, rice, or any of the grains, pour over boiling water, and let stand half an hour; the grains should be sound, and well washed and dried before parching. Serve the drink warm or cold, without sweetening.

#### FOODS IN FEVERS.

While a fever is in progress, the patient needs very little to eat. If food is taken, it should be mostly fluids; fruit juices when relished, are nearly always in order. So are thin gruels very thoroughly cooked; these can be made with rice, oat meal, corn meal, or almost any of the grain preparations. When there is a weak or uneasy feeling in the stomach from lack of food, or rather from the presence of bile and other secretions, a few sips of hot water will help to remove them, and take away the abnormal craving.

Patients who are very ill or have been sick a long time, often tire of the same thing; fruit juices which may be greatly relished at first are afterward not liked, or even tolerated. When this is the case, well-cooked gruel can be taken instead. Should both become distasteful—which sometimes happens in a protracted illness—a substitute must be found, provided the patient requires nourishment. But the physician will have to discriminate between an actual need, and the mere whim of an invalid. Sick people frequently ask for food which they can neither digest nor appropriate.

A plain and simple broth or soup is often relished, when gruels, fruits, and fruit juices are not wanted. But if the patient still has fever, these soups or broths should be made without meats or meat juices. There are ways of doing this, as we shall see. A little milk or cream added to the soup in finishing, will make it much

more wholesome and delicate than if meat is used.

During convalescence, the patient as a rule has little or no trouble in relishing his food; the main thing is to keep him from overeating. Better commence by giving fluids or semifluids, and have the meals not too far apart. Then gradually increase the quantity, and change the character of the diet as he improves. Little or no solid food should be allowed, until the system has need of it; we must give the digestive organs time to gain strength, and the bowels to recover in some degree their usual tone and activity. As the fluids are more and more dispensed with, the semifluids, as mushes, can take their place; also fruits, raw or cooked. The mushes may be served with juicy fruit, or a little milk.

Some patients who have been accustomed to meats and other animal foods, will ask for chicken broth, mutton broth, or oyster soup; they crave a stimulant, rather than the elements of nutrition. Oysters, at their best, contain very little nutriment, and that of poor quality. When the patient is inclined to be peevish, childish in fact, it is sometimes better to humor his whim than to create too much excitement; but in doing so, great care must be taken to make no serious mistake in the diet. Mutton or chicken broth can be prepared in such a way, that little or no harm will result from its use during convalescence, provided it is not repeated too often. As the patient improves, his appetite will become more normal; it will also be under better control.

Recipes for preparing fruit juices, have already been given. In the following will be found some directions for making gruels, mushes, etc.

*Oat Meal Gruel.*—Into a quart of boiling water, stir a heaping tablespoonful of oat meal; cook thirty minutes, and put through a tea-strainer or a cheese-cloth.

If not thick enough, boil a little longer. A gruel may be made by adding two cups of hot water to one cup of oat meal, well cooked; stir together, strain as before, and heat thoroughly.

If wanted immediately, pour half a cup of cold water over three tablespoonfuls of fresh oat meal, and stir well; then add a pint and a half of boiling water, and stir again. Either strain, or let the mixture stand two or three minutes and drain off the fluid portion. Set this over the fire, and stir till it boils; cook ten to fifteen minutes, and skim.

*Corn Meal Gruel.*—To make this gruel, stir a tablespoonful of corn meal, a little at a time, into a quart of boiling water, and cook half an hour; longer, if the gruel is not thick enough. Stir frequently, and do not let it scorch. The meal used should be rather fine, and perfectly fresh.

*Wheat Meal Gruel.*—Stir two tablespoonfuls of good wheat meal into a quart of boiling water, adding it very slowly to avoid lumping; cook fifteen minutes without scorching. When done, strain through a thin cloth or fine strainer.

*Rice Gruel.*—Look over and wash two tablespoonfuls of rice, add a quart of boiling water, and cook slowly; stir or shake at intervals, to keep the rice from sticking. Boil an hour, or until the grains are perfectly soft; then squeeze through a coarse cloth, or put through a tea-strainer. Heat again, and serve.

If soaked beforehand the rice can be cooked in less time, boiling it in the same water; then strain as before.

*Barley Gruel.*—A gruel can be made with crushed barley, but requires longer cooking than most grains. When desired, a little milk or cream can be added to



any of the gruels; though if the patient is feverish it should be left out.

*Rice Water.*—Wash half a cup of rice through several waters, put it into a saucepan, and add three cups of cold water; boil half an hour. Then strain off the rice water, and heat before serving.

*Oat Meal Mush.*—Into a quart of boiling water stir the oat meal (or you may use rolled oats), adding it slowly, which will give time to thicken. Stir frequently the first ten or fifteen minutes, or the meal will settle to the bottom and scorch. Then set the kettle where it will simmer gently, and cook an hour and a quarter. Do not stir much, as it makes the mush sticky; lift it gently from the bottom, instead of stirring; a round stick is best. Have the mush thin enough to pour, but not too readily.

Another way of making, is to cook in a double boiler or rice-cooker, allowing from two to two and a half parts water to one of meal. Have the water boiling, and stir in the meal a little at a time; continue to stir till the mush sets; then cover, and cook two hours or longer.

*Corn Meal Mush.*—White “flint” corn meal makes the best mush, though the golden flint is very good; it should not be too fine. Have the water boiling, and put in very little meal at first; stir constantly, and add slowly. This will allow time to partly cook before the mush gets thick; if it thickens too fast it will taste raw, no matter how long it is cooked. Repeat the stirring to prevent sticking, and boil an hour and a half, or longer. It should be thin enough to pour when done.

*Graham Mush.*—Have a quart of boiling water, and stir gradually into it coarse graham flour (wheaten meal), to make a mush not very thick; less than half a

pint will be enough. There must be no lumps; place over a moderate fire, and cook without scorching. After fifteen minutes, set where it will steam five or ten minutes longer. A little milk or cream stirred in at the last, will improve the flavor.

*Rye Mush.*—Make the same as graham, using unbolted rye flour; have the mush rather thin when done.

*Farina Mush.*—Stir half a cup of farina into a quart of boiling water, adding it slowly to avoid lumping. Cook fifteen minutes, and stir frequently; then add a little milk or cream, stir well, and lift from the fire.

*Rice Mush.*—Put two tablespoonfuls of carefully washed rice into a quart of boiling water, set where it will simmer, and shake at intervals to keep it from sticking. Cook slowly till the rice is soft, and thick enough for mush; this will take from one to two hours. If it gets too thick add a little boiling water, and cook a few minutes longer.

*Samp.*—Samp is made from corn, and is finer than hominy. It is sometimes called grits. Cook in a double boiler, taking one part samp to six of boiling water; stir in gradually to prevent lumping, and keep stirring till it begins to thicken. Then steam three hours, and add a little milk or cream at the last.

For hominy, coarse or fine, take one part grain to four of boiling water, and steam four to five hours; though if soaked in cold water beforehand (several hours or over night), less time will suffice. Cook in the same water used for soaking; and finish with a little cream, or rich milk.

Whole or crushed barley is done in the same way, using about one part barley to five of boiling water. If unsoaked, crushed barley needs four hours' steaming, and the whole grain about five.

*Other Mushes.*—Almost any of the grain preparations can be made into a mush, cooking in an iron pot or a double boiler. If in the latter, twice the time is required, and only half the amount of water.

Mushes are generally served with fruit juices, as thin cranberry sauce, gooseberry or other fruit juice; stewed fruit that is juicy may also be used. During convalescence, particularly in the early part of it, these mushes are often eaten with a little milk or cream.

*Potato Soup.*—Wash and pare two or three potatoes, medium size; they must be mealy, of good quality, and not the least bit sunburnt. Either quarter or cut in thick pieces, but do not slice them. Drop into a quart of boiling water, cover, and cook fast thirty to forty minutes; stir frequently, to break up the lumps. Then mash fine or press through a colander, return to the kettle, and thicken with a little flour moistened with milk or cream. Boil three to five minutes, and serve. A stalk of celery or a sliced onion may be put in for flavoring, and the soup strained before thickening.

*Dried Peach Soup.*—Trim and wash carefully a handful of good dried peaches. Then put them into a granitized kettle, with enough water hot or cold to make plenty of juice, and stew till tender. If the juice is dark and tastes strong, add a little water boiling hot.

To make the soup, put into a fruit-kettle half a cup of the cooked peaches, one cup of juice, and the same of boiling water. Then make a thickening by mixing a teaspoonful of flour with two tablespoonfuls of cold milk, and stir it in. Cook five or ten minutes, cool, and serve.

*Barley and Tomato Soup.*—Put half a cup of pearl barley into three quarts of cold water, add if liked an onion thinly sliced, and boil till the grain is tender; it

will require from two to three hours. Then put in half a can of tomatoes, two or three potatoes thinly sliced, and a tablespoonful of chopped parsley; also a stalk of celery if you have it. Cook an hour longer, strain, and return to the kettle; add half a cup of milk or cream, heat ten to fifteen minutes, and lift from the fire.

Rice can be used instead of barley, and it will cook tender in half the time.

*Okra and Tomato Soup.*—Make in a porcelain or granitized kettle, or the soup will be discolored. Take two quarts of cold water, half a can of tomatoes, a quart of okra thinly sliced, and a bunch of sweet herbs. Cook two hours, and strain; then turn in half cup of milk or cream, and heat again to boiling.

A cup of canned corn or canned peas may be added, twenty minutes before straining. If the soup is too strong dilute with boiling water, and simmer a few minutes before putting in the milk or cream.

*Corn and Tomato Soup.*—Into two quarts of cold water put one pint of sliced or canned tomatoes, and half a pint of canned corn, or grated green corn; also one or two potatoes peeled and quartered, a stalk of celery finely cut, and a sliced onion if liked. Cook an hour in a granitized kettle, stirring often, then strain; add half a cup of milk or cream, and heat ten minutes.

*Barley Broth.*—To start this soup, put into a granitized kettle three quarts of cold water with a cup of barley, and cook two hours. Then add half a turnip peeled and sliced, one onion finely minced, and a spoonful of chopped parsley or a little celery. Simmer slowly another hour, and do not scorch; strain, add half a cup of milk or cream, and heat to a boil.

*Chicken Broth.*—Carefully dress a young chicken

(it should be drawn as soon as killed), and take half of it for the broth. Disjoint it, remove all the fat, and cut the breast into two or three pieces. Cover with cold water, and skim as it begins to boil. Then add a dessert spoonful of rice, and cook slowly till the meat is perfectly tender. When done lift out the chicken, add a spoonful of cream, and heat a moment before serving.

*Mutton Broth.*—Take a pound of nice lean mutton or lamb; a scrag of neck, or a rib piece trimmed of its fat, is good. Cut into small bits, start in a quart of cold water, and skim as soon as it boils. Then add a dessert spoonful of rice, a sprig of celery, and an onion if liked; simmer gently two hours, or until the meat is cooked to pieces. When cold skim off all the grease, and heat again when wanted.

Soups and broths may be served with dry toast, or hard graham rolls; not forgetting the rule, that little or no solid food should be eaten until the patient is well advanced in convalescence, and able to digest it.

*Dry Toast.*—Cut the slices nearly half an inch thick, from bread that is two or three days old; good home-made graham is best. Then either toast over coals or lay in a hot oven, and when one side browns turn the other. Graduate the heat in such a way that each surface will be done evenly, with little or no soft bread between. If the edges are scorched, scrape carefully with a knife. Wrap the toast in a hot napkin, lay on a warm plate, and serve immediately.

If the loaf is very dry and hard dip the slices quickly into cold water, put it in a pie-pan, and set in the oven. When toasted on top turn the bread over, and brown the other side.

*Hard Graham Roll.*—Mix good graham flour with very cold water, forming a dough as soft as you can

handle; if of red wheat or coarsely ground, the flour must be sifted. Knead thoroughly from ten to fifteen minutes, or until the dough is smooth and elastic. Form into rolls three or four inches long, and half to three-quarters of an inch thick; leave no dry flour sticking to them. Space a little apart in the pan, prick deeply with a fork, and put immediately into the oven; this must be hot enough to brown nicely, but not to scorch. Bake from twenty to thirty minutes. When done, the rolls should not yield to pressure between the thumb and finger. Spread them out on a table, and do not put away until thoroughly cold.

These rolls may be eaten a little warm; or you can have them cold the next meal. When made about half as thick, they are called sticks or stems.

*Baked Potatoes.*—Select nice smooth potatoes, wash carefully, and trim off defective spots; they must not be sunburnt. Bake in a hot oven, but without scorching. The moment they are done, crush each potato in a clean cloth until the skin bursts; then roll in a hot napkin, lay in a heated tureen, and serve immediately. Old potatoes are best peeled before baking.

*Boiled Potatoes.*—Never soak potatoes, whether peeled or unpeeled; it wastes their nutrient elements. Wash quickly, pare, and drop into boiling water. The moment a fork will puncture them easily, drain off the water without removing the lid; this will keep the steam in till they are served, which should be as soon as possible. Have the tureen hot, and keep it closely covered. Potatoes free from sunburn, are good boiled in their jackets.

*Mashed Potatoes.*—Prepare, boil and drain, as in the preceding recipe, keeping in the steam. Mash while hot, till there are no lumps; then stir lightly with a

fork, dish into a hot tureen (not too full), and lay on the cover, also hot.

If liked, a little milk or cream can be added while mashing.

*Soft Boiled Eggs.*—Put the eggs into an earthen crock or other deep vessel, and pour over enough boiling water to considerably more than cover them. Then put on a closely fitting lid, set the vessel where it will keep hot but not boil, and cook five to seven minutes. The time will vary somewhat; large eggs and those fresh laid, take a little longer. The whites should be slightly jellied and the yolks soft.

*Baked Apples.*—Take sound apples, tart or subacid, and free from blemish. Wash well, lay in an earthen dish or granitized pan, and add a little boiling water; then place in a hot oven, where they will bake but not scorch. When half done turn them over, and add a little more boiling water if necessary; they should be thoroughly cooked, and also rather juicy.

*Stewed Apples.*—Pare, core and quarter or cut into eighths, apples that are fine-flavored and not too ripe. The subacid varieties should cook slowly, in fact simmer, with just enough water to make them a little juicy when done. Use a spoon to push down the pieces, but do not stir; they should be whole, and the juice clear. Stew from one to two hours; little or no sugar will be needed.

Apples that are very tart will fall to pieces; cook them quickly over a pretty hot fire, and add a little sugar before finishing. Stir thoroughly, as soon as the pieces will break up easily. After one or two stirrings the sauce should be smooth; if cooked too long, it will be insipid.

## DIET IN CHRONIC DISEASES.

In every chronic ailment, the patient's recovery will depend very much upon his dietetic habits, particularly the amount of food that he eats and the quality of it. Probably in most cases, two meals a day would be better than three; though this is not always expedient. It will make but little difference however, provided the third meal or supper is very light, and simple in character.

To insure good digestion, no active discussions ought to be carried on at mealtime. Let the conversation be free from anything that will excite or depress the mind. Also instruct the patient to eat slowly, and to *thoroughly masticate* his food. Very few understand the importance of this. Food that is poorly masticated, will not be well mixed with saliva; it enters the stomach in a crude condition, and being hard to digest will throw extra work upon that organ. The food elements will not all be taken up by the absorbents; the blood will be poor in nutrient materials, and the tissues half starved. The best rule for masticating, is the following: *Chew every mouthful of food until it is reduced to a fluid or semi-fluid state, before swallowing it.* This will insure thorough insalivation, and give the stomach less work to do. Not only so, it will take less food by about one-third, to nourish the tissues properly.

In regard to *drinking* at meals, the food should never be washed down with a beverage. If the table is abundantly supplied either with juicy fruits or vegetables, no drinking will be needed at meals; and it is a good plan to wait half an hour after eating, before taking a drink. The digestive fluids, either in the mouth, stomach or intestines, will do better work if undiluted, provided the food is of the right kind.



Another excellent rule, is to avoid *chilling* the stomach with food or drink much below blood heat, as it would check the flow of the gastric juice. Neither should we call the blood away from the digestive organs when they are trying to do their work; this is often done by taking active exercise, mental or physical, too soon after eating. Invalids especially ought to let an hour elapse, before doing hard thinking or work of any kind. Even to write a letter immediately after dinner, is not a good thing. In the first place, if the patient leans over in writing, the stomach will be crowded upon; this checks the digestive process, and gases are often formed. Then, if the letter is on business, it will require too much thought, and a similar result will follow. Another way of causing indigestion is to rush from the table and out of doors, perhaps in very cold weather, and so chill the body that its secretions will be interfered with.

Where the patient's digestive organs are more or less impaired, it is often necessary to restrict him to a diet of fruits and grains, for a time at least. If he takes three meals, he should make the breakfast and supper of graham bread (the unleavened is best) and fruit, with perhaps a dish of oat meal or other cereal; though if the patient is a bad dyspeptic, he may have to leave off the mushes. These if allowed, should be eaten along with the hard graham roll, or a bit of dry toast; something that will insure thorough mastication, even of the soft foods. It is a mistake to serve mushes by themselves, or with only a fluid dressing; they ought always to be eaten with hard bread of some kind. The little sticks or stems made of graham flour, are favorites with persons whose stomachs are weak.

The diet in chronic diseases should consist largely of

good graham bread, and fruit. Raw ripe fruits (avoiding the seedy varieties) are excellent; and whether raw or cooked, little or no sugar is needed with them. If three meals are eaten, have the breakfast and supper of fruits and cereals; the bread should as a rule be either dry toast, or some form of unleavened bread, as hard graham rolls. When the digestion is fairly good, plain vegetables in limited variety may be served at dinner; as boiled or baked potatoes, peas, green corn, tomatoes raw or cooked, etc. Animal foods, as meat, milk, butter, eggs, etc., ought to be left off altogether, or partaken of sparingly. Greasy foods, as meats, meat gravies, butter, cheese, and even milk, tend to clog the skin with oily matter, and to throw more work on the mucous membrane. As to sweets, rich pastries, seasonings, condiments, and the like, the patient should let them alone. An excess of sugar or other sweets engorges the liver; and highly seasoned food will break down the kidneys. Fresh nuts may be eaten in moderation; but they are a hearty food, and not everyone can digest them perfectly. If prepared by grinding and eaten while fresh, they are more easily managed by the digestive organs; they may be used instead of butter, taking only a little at a time. The great danger with many patients is the habit of eating too much, and especially bread or other solid food; every ounce that the system does not need, clogs the depurators and renders them inactive.

Fruits, with very few exceptions, do not digest well with vegetables; nor should too many varieties of either, be taken at a single meal. This is particularly true, where the digestive organs are already impaired. The exceptions referred to, embrace the citric acid fruits, and a few others. Orange, lemon and lime do nicely with

vegetables, but not with other fruits. The cranberry too combines well with vegetables, and also with apples; not so well with other fruits. The banana seems to agree with either fruits or vegetables. It does best if eaten at the beginning of the meal; though with a cold lunch of grains, fruits and nuts, it may be taken at any time. Oranges, as a general thing, should be eaten either between meals, or at the first of a vegetable dinner.

The cereals form a good combination with either fruits or vegetables; so do the nuts. Grains should always be thoroughly cooked; if underdone, they are hard to digest.

Among the foods that properly belong to a hygienic dietary, are the following.

*Fruits.*—Apples, apricots, peaches, pears, plums, quinces, grapes, berries of all kinds, cherries, currants, cranberries, crab apples, bananas, etc.; also the citric acid fruits, as oranges, grape fruit, lemons, limes, etc. Then there are the dried fruits for winter use, which include apples, apricots, peaches, pears, plums, prunes, and a variety of sweet fruits; as currants, raisins, dates, etc. Some of the fruits are better eaten raw, particularly at breakfast; as apples, peaches, grapes, cherries, plums, strawberries, etc. They should be ripe and fresh.

Many persons are unable to eat seedy fruits; there is often a chronically sensitive condition of the mucous membrane, both in the stomach and bowels, and the little sharp seeds (of strawberries, cranberries, and the like) irritate and inflame it. For such patients these fruits should be strained, removing the seeds. Very few can take raspberries, blackberries, etc., a number of times in succession, without being more or less disturbed

by them. It is better to alternate these with stewed or baked apples, or some kind of sauce that contains no seeds. It is also an advantage in eating strawberries or other seedy fruits, to take them with mush; this partially envelops the seeds, and helps to protect the mucous membrane.

*Grains.*—The cereals include wheat, corn, rye, oats, barley, rice, etc., and the various preparations that are made from them.

*Nuts.*—The most common of these are English walnuts, almonds, butternuts, hickory nuts, black walnuts, pecans, Brazil nuts, hazel nuts, peanuts, chestnuts, beechnuts, etc. They should always be fresh.

*Vegetables.*—Potatoes (Irish and sweet), green corn, peas, beans, beets, okra, tomatoes, cabbage, cauliflower, carrots, celery, parsnips, turnips, spinach, lettuce, rhubarb, pumpkins, squashes, cucumbers, melons, etc. Stale vegetables, especially cucumbers and melons, should be carefully avoided.

Soups can hardly be classed among the *staples* in the hygienic dietary. Many patients are unable to digest them; though this is partly because they are not taken properly. A soup should never be served very hot; else it will relax the stomach, and interfere with digestion. If correctly made it will contain no seasonings, or next to none; it should be taken in sips with hard graham roll, dry toast, stems or sticks, and not too much of it at a single meal. Cold weather is the best time for soups, and once or twice a week is generally often enough.

For the benefit of those who have had little experience with hygienic foods, or in making suitable combinations, a few bills of fare for the different meals are given below; though for patients with very weak diges-

tion, the variety in some of these may have to be reduced.

*Breakfast.*—(Spring or Summer.)

Raw ripe fruits, as apples, peaches, or cherries; these to be eaten at the beginning of the meal. Hard graham rolls, mush rolls, dry toast. A well-cooked mush of oat meal, corn, or other cereal. Apple sauce, or other stewed fruit.

*Breakfast.*—(Autumn and Winter.)

Ripe apples, peaches, grapes, or pears. Hard graham rolls, stick or stems. Graham or other gems. Corn, oat meal, or farina mush. Stewed plums, baked apples, cranberry sauce; or, stewed apricots (dried), canned cherries or other fruit.

*Dinner.*—(Spring.)

Hard graham rolls, mush rolls, or graham loaf bread. Steamed grain, as rice, samp, farina. Boiled or baked potatoes, spinach, green peas; or, potatoes, asparagus, cabbage or cauliflower. Rhubarb pie.

*Dinner.*—(Summer.)

Raw tomatoes or melons, the latter at the beginning of the meal. Hard graham rolls, corn gems. Green corn or baked potatoes, string beans, summer squashes, young beets.

*Dinner.*—(Autumn.)

Cantaloupes (first of the meal). Hard graham rolls, mush rolls. Sweet potatoes, raw tomatoes, turnips; or, squash (baked or stewed), Lima beans, cooked tomatoes or corn and tomatoes stewed together.

*Dinner.—(Winter.)*

Oranges. Hard graham rolls, corn bread or steamed loaf bread. Hominy or samp. Baked beans or dried Limas, stewed cabbage, tomatoes from the can.

Or, bananas (first of the meal). Bread and grain as before. Boiled or mashed potatoes, turnips, squash, cooked tomatoes.

*Fruit Dinners.*

In these, there are no vegetables except the potato, and it can be omitted if desired. Patients who cannot eat vegetables, must have a dinner of this kind.

Hard graham rolls, corn bread or mush rolls. Rice, samp, or crushed barley. Baked apples, stewed or canned fruit. Boiled or baked potatoes. Fruit pie, or currant scone with fruit juice.

Or, nuts of some kind (ground if preferred). Bread and fruit as before. Rice and raisins. Boiled or baked potatoes. Apple dumpling without dressing, or with fruit juice.

*Suppers.*

For patients with weak stomachs, fruit and bread only, with not too much of the latter. Dry toast or hard graham roll, will be better managed than soft bread.

Those who have stronger digestion, may add some kind of mush; it can be made of graham or rye flour, farina, or other grain preparation, and eaten with cooked fruit or fruit juice.

Full directions in regard to diet, food combinations, and the best methods of preparing fruits, grains and vegetables, will be found in *Health in the Household*.\*

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\**Health in the Household, or Hygienic Cookery*, written by Dr. S. W. Dodds, a work of over 600 pages, price \$2.00, is for sale by The Health Culture Co., Passaic, N. J.

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