The mother's hygienic hand-book : for the normal development and training of women and children, and the treatment of their diseases with hygienic agencies / by R.T. Trall.

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NORMAL DEVELOPMENT AND TRAINING
OF WOMEN AND CHILDREN,

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TREATMENT OF THEIR DISEASES WITH
HYGIENIC AGENCIES.

BY

R. T. TRALL, M.D.,

AUTHOR OF
"HYDROPATHIC ENCYCLOPÆDIA,"
"THE TRUE HEALING ART," "HYGIENIC HAND-BOOK,"
"UTERINE DISEASES AND DISPLACEMENTS,"
"SEXUAL PHYSIOLOGY," "SEXUAL PATHOLOGY," "DIPHTHERIA,"
"THE ALCOHOLIC CONTROVERSY,"
"THE TRUE TEMPERANCE PLATFORM," "WATER-CURE FOR THE
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PREFACE.

It is natural for women to desire children. Every married woman, whose social relations and individual conditions are not abnormal, does desire them. But the artificial habits of society have so deteriorated the health of the majority of the women of all civilized countries that the idea of maternity is associated with many diseases and perils. The function of child-bearing is regarded almost everywhere in civilized society as necessarily attended with more or less of sickness, much suffering, and, possibly, death. And the impression is also very general among women that raising children is devitalizing and conducive to premature decrepitude and infirmity. It is for these reasons, more than because of pride, selfishness, or depravity, that so many women seek preventives of pregnancy, resort to abortion, or practice feticide or infanticide.

During a practice of more than thirty years I have noticed that the sufferings of child-birth, and the diseases incident to the periods of gestation and nursing, are, invariably, other circumstances being equal, in the direct ratio to the unhygienic habits of the mothers. Some women do, indeed, enjoy such favorable organizations and vigorous constitutions that they suffer little, comparatively, notwithstanding their habits of eating, drinking, dressing, exercise, &c., are in violation of almost every law of organic life; while others, of feebler vitality and less fortunate development, may suffer much,

despite the most careful attention to hygiene. Such cases, however, are rare and exceptional.

For more than twenty years, during which time I have had the professional care of one or more Health Institutions, I have been in the habit of receiving and treating women during confinement. Some of these were first cases ; others had suffered greatly in one or more previous labors ; but in no case did any one of my patients suffer severely. In most cases, although the labors were energetic, the pains were very slight and in all cases the sufferings were extremely trivial as compared with those of women generally. And when I add that the same results have attended all whom I have advised and attended in private practice, the reader may be prepared to appreciate the motives which have induced me to write this book.

R. T. T.

Florence Heights, N. J.

INTRODUCTION.

Motherhood! There is no word, except God, of greater significance in human language. The function of maternity approximates creative power more nearly than any other known to human beings. The development of the primordial germ, the inception of life, the comminglement of the sperm and the germ cells producing an individual being, and the differentiation of cells into vessels, fibres, tissues, structures, and organs, ever have been and still are among the marvelous works which scientific minds admire and cannot solve. We know many of the processes or changes which organized matter undergoes in development and growth; we understand many of the conditions which influence development and growth, and we are acquainted with a multitude of facts which relate to the never-ceasing transformations of a living organism, from the moment of conception to its final dissolution. But the mystery of life still remains unfathomed. Perhaps it will never be revealed until "this mortal puts on immortality."

But for all practical purposes, so far as philosophy can comprehend, it is enough for us to know the laws of our being, the circumstances which affect us beneficially or injuriously, and to understand the great fundamental truth underlying all human conduct,—that all good is found in obedience to the laws of organic life, and that all evil results from disobedience.

Motherhood should be normal. But it never will be and never can be under the prevailing fashions of society. A man might as well drink intoxicating liquor and then endeavor

"To walk erect with face upturned to Heaven,"

without gibbering or staggering, as a woman expect to eat,

drink, dress, and dissipate in the fashionable ways, and be the mother of healthy offspring.

One of the pernicious errors abroad is that woman is the "weaker vessel" physically; thus accounting for, if not excusing, her manifold infirmities. Fashion is justified and nature blamed. This doctrine has its origin in viewing "woman as she is," and not "woman as she should be." The fact that woman in civilized life is, as a rule, feebler than man, is taken as the evidence of constitutional and natural infirmity.

There is no truth in this notion. Physically woman is man's equal. In bodily stamina, powers of endurance, vital resources and muscular strength, under the same circumstances of habit and education, she is in no sense his inferior; on the contrary, if there is a difference, it is in her favor. This should be so; and there is an anatomical and a physiological reason why it is so. The woman has not only to nourish herself but others. She must construct and replenish her own structures and those of the offspring. Hence she has the greater nutritive apparatus. It is because of this larger endowment of the nutritive system that her organization is more round and smooth, the organic nervous system more developed comparatively, and the glandular structures more prominent.

That women can endure prolonged labor, privation of food and sleep, and unceasing care and watchfulness, better than men, has been noticed a thousand times by physicians in the sick chambers; and, according to the opportunities, there are living to day quite as many aged and vigorous women, who have been active workers through life, as of men. I could name a hundred examples, but two or three of world-wide fame will illustrate the principle just as well as a thousand could. Mrs. Sarah J. Hale, now eighty-four years of age, has labored incessantly in the field of literature for three score and ten years, and is now as busily and actively employed as in the days of her youth. Lucretia Mott, now eighty years of age, whose life has been one of remarkable industry and usefulness, retains all the powers of her vigorous mind seemingly unim-

paired, with extraordinary bodily power and activity. Mrs. Lydia Maria Child, after earnest and unresting labor for nearly half a century, during which time she has produced some of the ablest historical works ever written,—works requiring vast labor, the closest attention, and the most careful discrimination, with accurate analysis and profound reasoning, is still apparently in her prime, mentally and physically. And last, though not least, Mrs. Elizabeth Cady Stanton, who has raised a family of fine healthy children, is now, at the age of sixty, a model woman, so far as mental power and bodily organs are concerned.

Perhaps no woman living is better qualified to give an opinion on the subject we are considering than Mrs. Stanton. In a recent lecture delivered in San Francisco, California, on the subject of "Marriage and Maternity," Mrs. Stanton said:

"The idea that woman is weak, inherently, is a grand mistake. She is physically weak because she neglects her baths—because she violates every law of her nature and her God—because she dresses in a way that would kill a man. I feel it to be my mission to arouse every woman to bring up her daughter without breaking her up in doing so. Our female idea of dress is all wrong. My girlhood was spent mostly in the open air. I early imbibed the idea that a girl was 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. The weight hung alone on my shoulders. I never compressed my body out of its natural shape. My first four children were born and I suffered 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, read poetry. 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 a half pounds. The 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.

"Another idea: It is of more importance what kind of a child we raise than how many. It is better to produce one lion than twelve donkeys. We have got donkeys enough; let us go into the lion business. Suppose our great statesmen, Clay, Webster and others like them, had had only the society of refined and educated women, they would not have, as they did, looked upon women only in a physical light. If men have dolls for wives they will seek the society of intellectual courtesans. We must have a new type of womanhood. We need it more than gold. Courtesans ruled France and brought her to ruin. Courtesans will rule this country unless woman rises to her true dignity. The old idea of the oak and the vine is pretty, but it is mere poetry; the emergencies of life prove its falsity—the lightning strikes them both alike."

In concluding this introduction, the following remarks from another thinking woman, Rev. Antoinette Browne Blackwell, are worth recording:

"WHO ARE HEALTHY WOMEN AMONG US?

"As I write from a rural neighborhood, I may be competent to testify that there still are healthy women among *us*—rosy-cheeked maidens, with ample waists and well-expanded chests, who can walk a mile or two to school, and sometimes help milk cows; middle-aged, unmarried women, with stout, well-knit physique, plenty to do and cheerful hearts, accepting and glorifying the most menial duties; mothers, who can bear the reasonable number of six or eight children, and look as wholesome still, in the green country setting as well-ripened apples in Autumn, hanging up among their glossy dark leaves. These are *our* healthy women. *They all have something to do;* and yet are not overburdened either with care or never-ending labor. Now, who are the healthy women of the great world? When I used to be among them, "taking notes," I was im-

mensely impressed with the fact that it was invariably women who had something to do, and did it always with a vigorous and reasonable enjoyment in the occupation. In the field, in the factory, in the household, on the platform, in the study, in the studio, and in a hundred other places, I have seen such women; but I never knew a thoroughly healthy woman who had nothing to do except to get other women to make her pretty little things to wear; and to wear them herself, chiefly at midnight.

"I am prepared to make the broad assertion that the average health of the intellectually working women of the last twenty years, in this country, is quite on a par with that of a smaller class of men. I affirm, moreover, that the health of mind-workers among men is rather below than above the medium standard of health for men generally—reason obvious: they stimulate mind at the expense of body. On the contrary, the average health of the women who coin money with their brains is above the average health of women generally—reason obvious: they have gained an additional object in life; have established a balance of harmony between mind and body—most of them still retaining a fair share of the ordinary duties and privileges of womanhood. It remains for the public to decide whether these assertions are correct or incorrect. If they are facts, here is one direct avenue to health for women already indicated. I believe, moreover, that the health of *working* women of all grades, throughout all the various occupations in which they are now engaged, is fairly equal—other things being exactly balanced — to the health of men in the same or similar vocations!"

CHAPTER I.

Ante-natal Influences.

Every child that is born is entitled to the inheritance of a sound bodily organization. This implies health on the part of both parents, but more especially on the part of the maternal parent, because she is much more immediately associated with the vital conditions of the offspring than the father is.

The child is but the unfolding of the mingled germs. The fertilized ovum contains all the elements of the future being. These elements are unfolded, not created, in the processes we term development and growth. How else can we account for the resemblance of children to parents? This is the law of all vital organisms, otherwise there could be no transmission of organization, no continuous and distinct species of plants or animals. The stalwart oak is but the unfolding of the acorn. The plant has nothing that did not exist in the seed. Our farmers understand the importance of perfect seed in producing the best crops. And they are not ignorant of the fact that comely and profitable animals cannot be raised unless both parents are healthy when they are begotten. But how little these considerations are thought of, and how much less they are regarded, in relation to human beings!

All persons who expect to have children desire them to be beautiful and good. But the vast majority who do have children are wholly reckless of all conditions that ensure that result. They give being to immortal souls in diseased conditions of body and morbid states of mind, and then wonder that a "mysterious Providence" afflicts them with frail or depraved offspring. It would be a very mysterious Providence that would reverse the order of nature, stultify His own laws, and produce *good* consequences from *bad* causes.

When we say that parents owe the duty to children of being healthy when they beget them, we have not quite reached the root of the matter. The woman who develops the germ must be healthy while she is doing it, or the germ will be defective, and its future unfoldment produce an imperfect being. There is, therefore, no practical solution of the great problem in sociology — normal organizations — except in training the girls healthfully. Who does not know that the great majority of girls, in all civilized countries, are reared, trained, educated, as well as fed and clothed, in direct opposition to all conditions of health, and all laws of their being? The wonder is not that so many are frail, but that any one is otherwise.

"Ye cannot gather figs of thorns nor grapes from thistles." The child is fated, through its whole period of earthly existence, to endure or enjoy, as the case may be, the conditions which the good or bad qualities of its parents have forced upon it. That this subject is, more than ever before, attracting the attention of writers and lecturers, is a hopeful sign. The New York Tribune, not long since, asserted that the cause of half the vice among us is the ignorance of parents of the fact that certain nervous and cerebral diseases transmitted from themselves tend to make criminals and drunkards of their children.

A man may drink moderately but steadily all his life, with no apparent harm to himself, but his daughters become nervous wrecks, his sons epileptics, libertines or incurable drunkards, the hereditary tendency to crime having its pathology and unvaried laws, precisely as scrofula, consumption or any other purely physical disease. These are stale truths to medical men, but the majority of parents, even those of average intelligence, are either ignorant or wickedly regardless of them. There will be a chance of ridding our jails and almshouses of half their tenants when our people are taught to treat drunkenness as a disease of the stomach and blood as well as of the soul, to meet it with common sense and a physician, as well as with threats of eternal damnation, and to remove gin-shops and gin-sellers for the same reason that they would stagnant ponds

or unclean sewers. Another fatal mistake is in the training of children — the system of cramming, hot-house forcing of their brains, induced partly by the unhealthy, feverish ambition and struggle that mark every phase of our society, and partly for the short time allowed for education. The simplest physical laws that regulate the use and abuse of the brain are utterly disregarded by educated parents. To gratify a mother's silly vanity during a boy's school days, many a man is made incompetent and useless. If the boy show any sign of unnatural ambition and power, instead of regarding it as a symptom of an unhealthy condition of the blood-vessels or other cerebral disease, and treating it accordingly, it is accepted as an evidence of genius, and the inflamed brain is taxed to the uttermost, until it gives way exhausted.

An eloquent writer says : "Women by nature are appointed to the holy mission of motherhood, and by this mission are directly charged with the care of the embryotic life, upon which so much of future good or ill depends. It is during this brief period that the initials of character are stamped upon the receptive incipient mentality which, expanding first into childhood and on to manhood or womanhood, reveals the true secrets of its nature."

The rights of children, then, as individuals, begin while yet they are in fœtal life. Children do not come into existence by any will or consent of their own. With their origin they have nothing to do, but in after life they become liable for action which perhaps was predetermined long prior to their assuming personal responsibility. In youth, children are virtually the dependencies of their parents, subject to their government which may be either wise or mischievous, and is as often the latter as the former. But, having arrived at the proper age, they step into the world upon an equality with others previously there. At this time they are the result of the care which has been bestowed upon them from the time of conception, and whether they are delivered over to the world so as to be useful members of society, or whether they go into it to prove a

constant annoyance and curse, seems to be a matter which cannot be made into such personal responsibility as to make it a subject of their own determining. At this period they find themselves possessed of a body and a partially developed mind, in the union of which, a harmonious disposition and character may have resulted. Respectively, they are possessed of all shades of disposition and character, from the angelic down to the most demoniacal; but all these are held accountable to the same laws; are expected to govern themselves by the same formula of associative justice, and are compelled by the power of public opinion to subscribe to the same general customs.

All people are obliged to meet the world with the characteristics with which they have been clothed, and which they had no choice in selecting. When all things which go to make up society are analyzed and formulated, it comes out that society holds its individual members responsible for deeds of which it is itself indirectly the cause, and therefore responsible for.

Another writer on this subject remarks: "It is scientifically true that the life which develops into the individual life never begins. That is to say, there is no time in which it can be said life begins where there was no life. The structural unit of nucleated protoplasm, which forms the centre around which aggregation proceeds, contains a pulsating life before it takes up this process. The character of the nerve stimula of which this is possessed, and which sustains this evidence of life, must depend upon the source from which it proceeds. In other words, and plainly, the condition of the parents at the time of the conception is a matter of prime importance, since the life principle with which the new organism is to begin its growth should be of the highest order.

"Cases of partial and total idiocy have been traced to the beastly inebriation of the parents at and previous to conception. On the other extreme, some of the highest intellects and the most noble and loveable characters the world ever produced, owed their condition to the peculiarly happy circumstances under which they began life, much of the after portion

of the growing process having been under unfavorable circumstances. Many mothers can trace the irritable and nervously disagreeable condition of their children to their own condition at this time."

The pernicious fashions of society which are demoralizing woman mentally and physically, as well as unfitting them to be mothers of anything but monstrosities, are forcibly stated but not exaggerated by Mrs. Henry Ward Beecher in the *Christian Union* of a late date ; under the heading of

"WHAT HAS BECOME OF ALL THE LITTLE GIRLS?

"We look in vain into many pleasant homes; or into the streets, cars, or steamers, for what was once a common sight,—and was then, and ever must be, the sweetest object in nature,—a simple, artless, *little girl*, with all the pretty, unaffected ways and manners of unsophisticated childhood, fresh and beautiful, about her. There is no lack of small beings, dressed in such a marvelous style that Darwin himself would be puzzled to make out the class to which they belong; but we find nothing to remind us of the little girls we used to know, either in dress or manners.

"In former times a pretty muslin bonnet, or a simple close-fitting cottage straw, was thought the most appropriate covering for a little head—protecting the bright eyes from too intense light, and shielding the rosy cheeks from the sun's too fervid kisses. But now we see *something*, placed on the sunny curls—leaving eyes and cheeks entirely unprotected—which is elaborately trimmed with bows, feathers, a flower-garden, or perhaps a mingling of both ; for, although it is too small for even a good-sized doll, the milliner, with an ingenuity which would have been praiseworthy if exercised in a more sensible manner, has contrived to pile up trimming enough to hide even the faintest suspicion of a bonnet. But, what is sadder than the lack of true taste and good common sense in this stylish affair, we see no semblance of child-like simplicity in the wearer. And the

bonnet is but the beginning of this unfortunate change which we mourn. The pretty '*baby waist*,' the plain white dress, the neat muslin or merino, so appropriate, which little girls used to wear, are supplanted by incomprehensible garments—the fac-simile of the grand dame's attire—flounces, fringes, bows, and double-skirts looped and festooned in an astounding manner, the child's—no, we mean the *young lady's* height, there are no *children* in these days—is less than her circumference. This dress is put on over a hoop, and the 'mite' who is made to carry such an incongruous burden, totters about on high-heeled boots. This tiny specimen of womanhood, hardly weaned from her mother's breast—or more probably, a wet-nurse's—shakes out her redundant robes, bending and twisting her small body in grotesque imitation of the woman spoken of by the prophet Isaiah, 'with haughty mien; walking *and mincing as they go.*' See how the little ape looks over her shoulders, as she tottles about, to be sure that her hoops give her dress and figure the correct *wiggle* her sharp eyes have observed in the stylish mother and her fashionable friends. It is lamentable that all the simplicity and beauty of babyhood and childhood should be destroyed by fashion.

"Added to the absurdity of the dress, these little women attempt to discourse on the 'latest style.' With their companions or dolls you will hear them imitating the discussions on this subject, that they daily hear in the parlor or nursery, from their mother; or, still imitating, with a contemptuous toss of their little heads, they will inform their listeners that they 'couldn't think of 'sociating with those girls, because they are not *stylish!*'

"A few days since, as we passed out of a store on Broadway, our attention was arrested by the conversation of two little figures seated in a fine carriage, waiting, doubtless, for mamma to finish her shopping. They were dressed in a style positively overwhelming. Their hats were wonders of skill, their gloves had the orthodox number of buttons with bracelets over them, a dainty handkerchief suspended from a ring attached by a chain to another ring on the little doll-like fingers. The dress was

simply indescribable. The elder was speaking to the younger, who, scarcely more than a baby, sat demurely by her side. 'Oh, mercy! just look at that horrid little girl who is crossing the street! She has no hoops on, and not a single flounce—no trimming at all on her dress! And, oh! see her gloves!—why, she has only one button! Pshaw! she's nobody—not a bit of style!'

"The youngest lisped a reply, which we lost as we passed on; but it was painful to think of the training they must have received which enabled them at that early age to judge a child of their own years so quickly by the rules of fashionable dress, and because her attire was not in exact accordance with that week's style, turn from her with contempt as something too low for their notice.

"Then, again, how soon a child taught by daily precept and example, learns to watch her little companions with envious or exultant feeling, as the case may be. How quickly she begins to grow hollow-hearted and deceitful; receiving, as she sees her elders do, a companion with open arms, or a welcoming smile; expressing the greatest affection, but the moment she leaves begin to criticise or make unkind remarks.

"'I don't like Nelly one bit, mamma; she's such a proud, stuck-up thing! I suppose she thought I should feel bad 'cause her dress had more trimming and was a little newer style than mine. I didn't let her know that I noticed it. But I do think it real mean, mamma, that she should have nicer things than mine. Papa is twice as rich as her father. It made me mad to see her show off her dress; and she kept looking at mine and sister's in such a way.'

"'I hope, my dear, you were polite to Nellie.'

"'Oh, yes! But, mamma, I was awful glad when she left—though I was just as smiling and pleasant as could be to her face.'

"'That's a good girl. You must always be very polite and cordial to your companions, you know. But I must say I think Nellie was quite vain; and you must never show that

you are proud of your clothes. I shall go out to-morrow and get that pretty dress you teased so for, I think."

"'Oh, mamma! I am so glad! And as soon as it is made I'll go right over and call on Nellie. Won't she feel bad when she sees my new dress! It will be ever so much prettier than hers.'

"And the mother smiled complacently, with never a thought of the improper and wicked feelings she was cultivating. Oh mothers! How can you be so blind! Both by precept and example you are teaching your children to make dress their idol; and to know very little of anything but that which pertains to fashion; to be envious or contemptuous of their little friends and companions, according as they are dressed better or worse than themselves. Can you ever reflect that God did not commit such treasures to your keeping without meaning some day to call upon you to render up the account of your stewardship? What can you say, when asked how you have trained the young souls given to your care? Can you reply, We have been instant in season and out of season in teaching them—what? To work for the good of others; to learn to do right; in all simplicity to love and obey the Saviour, who, taking a little child in his arms, said, "of such is the kingdom of heaven." *Of such?* Ah, no! Not of those children that you are training to avoid—not evil communications, but unfashionable companions; to look on the outward adorning, and not on the heart.

"But it is not alone the wealthy, indeed, who make no pretence to any higher law than their own selfish gratification, who bow the knee to fashion. Christian mothers, are you guiltless? Think of the time, the health and strength, given to dress—the bondage which compels you to pervert all real taste, to do violence to your own natural instincts of neatness and true elegance, and accept the absurdities of fashion, simply because the ruling style requires it. If you are thus influenced and beguiled, do you flatter yourselves that your children will not, from their earliest years, regard such homage as important?

We do not think it wrong to dress neatly and in as good taste as possible. We blame none for giving so much thought to their own dress and their children's as to provide those articles that are appropriate and becoming to the different styles of face, figure, and complexion. It is natural, and we think right, for a mother to dress her darlings as neatly and prettily as she can, without unnecessary waste of time and strength; but we do think it sin to spend money and time lavishly in following the dictates of fashion, and not of good taste and common sense; no one pretends to believe that there is either of these in the present style of dressing. It is utterly destitute of grace —is ridiculous to the last degree; but *fashion* compels, and women—*Christian women*—obey, and teach their little daughters like obedience! Oh, the money, time, and strength given to destroy, by the absurdities of fashionable dress, every vestige of beauty and grace which God gave you in your little ones! Take the week through, hour by hour, do you not give more time and thought to your own and your children's dress, than you can spare for your Master's service? Do not your children gather from your daily walk and conversation that to be fashionably dressed is of more importance than loving and serving the Saviour, who died for them and you? Judging by your daily conversation, which will they consider of the greatest importance—the service of God, or the devotion to Fashion? To which do they see you giving the largest part of your time—the adorning of their little bodies—"the plaiting the hair, the wearing of gold, and putting on of apparel"—or in teaching them that which is not changeable "not corruptible, even the ornament of a meek and quiet spirit, which is, in the sight of God, of great price"? What can you say, fashionable Christian mother, when he calls you to give an account of your stewardship?

It would seem that the moral considerations alone, so ably presented by Mrs. Beecher, ought to be sufficient to dissuade all mothers, and especially Christian mothers, from training their daughters in these ruinous ways; but, unfortunately, with a

large proportion of the mothers of the present day, fashion is more regarded than judgment or conscience, and more deferred to than God or humanity. The physiologist, however, must take still another view of this matter. We know very well, and can prophesy with unerring precision, that no girl trained and educated in these evil ways, can be normal, either mentally or bodily, when she reaches the age of womanhood, and that she can by no possibility give birth to a child that is not more or less abnormal, both mentally and physically. It is impossible, in an organization so misused, for the germ of the future being to be properly developed; and without a sound germ unsoundness will be manifested in the embryo, the child, the man, or the woman. The Health Reformer must begin his work with the newly-married couple, teach them to beget and rear children according to the laws of nature as manifested in the vital organism, instead of the laws of fashion as dictated by the vain and frivolous.

It is a very prevalent error that persons may impair the functions of individual life without materially affecting the integrity of the reproductive organs. Many parents will eat and drink pernicious things, use liquor and tobacco, indulge the most violent passions, &c., with little or no thought that such practices and habits deprave and enfeeble their sexual powers. Here as every where, self-preservation is the first law. The individual must be first-sustained. And however much unhygienic habits deteriorate the functions of individual life, the functions of social life will suffer still more. This is why so many persons of vigorous constitutions are the parents of feeble and sickly children. Many a mother breathes enough for herself, but not enough for the offspring during gestation; and this comes into the world frail and scrofulous, like a plant that has grown in a situation deprived of light.

CHAPTER II.

Anatomy of the Uterine System.

Every mother, actual or prospective, should understand the structures and uses of her reproductive organs. These consist of the uterus, in which the fœtus is nourished until birth, the ovaries, in which the germ, or egg, is produced, their appendages, and the mammary glands, or breasts which provide the infant with fluid food until its teeth are developed sufficiently to enable it to masticate solid food.

The Uterus.

The *Uterus* (womb,) properly the organ of gestation, is situated in the cavity of the pelvis (lower abdomen) between the urinary bladder and the rectum (lower bowel.) It is a pear-shaped sac, about three inches in length, two inches in breadth at its upper part, one inch in thickness, and weighs from an ounce to an ounce and a half. After child-bearing it is more globular in shape, and somewhat larger in size. Its upper broad extremity is termed, the *fundus*, its lower and narrower portion the *cervix*, or neck, and its opening into the vagina, the *os uteri.* The *cavity* of the uterus is small in comparison with the size of the organ. At the junction of the body and neck of the uterus, the cavity is constricted, constituting the *os internum.* The *coats* of the uterus are, an external serous, a middle muscular, and an internal mucous coat—the muscular coat forming the chief bulk of the organ, and, by contracting enabling it to expel its contents. The uterus is lined with a *mucous membrane*, which covers also the internal surface of the vagina and the Fallopian tubes.

The uterus is supported in its position in the pelvic cavity by

the upper portion of the vagina, whose fibres are connected with those of the neck of the uterus a short distance above the *os uteri*, and by six ligaments, two in front, two behind, and two lateral. These ligaments are formed by folds of *peritoneum* (the lining membrane of the abdominal cavity). The *anterior ligaments* pass between the neck of the uterus and posterior surface of the bladder, and are hence termed *vesico-uterine*. The *posterior ligaments* pass between the sides of the uterus and rectum, and are termed, *recto-uterine*. The *lateral ligaments* are *broad*, and form a septum across the pelvis, dividing its cavity into two portions, in the anterior of which is contained the bladder, urethra, and vagina, and in the posterior, the rectum.

The Ovaries.

The *ovaries* are oval-shaped bodies, situated on each side of the uterus, in the posterior part of the broad ligaments, behind and below the Fallopian tubes. They are about an inch and a half in length, three-fourths of an inch in width, and one-third of an inch in thickness, and weigh from one-eighth to one-fourth of an ounce. Each ovary is connected, by an anterior margin, with the broad ligament; by its inner extremity to the uterus, and by its outer end, to the *frimbriated* (fringe-like) extremity of the Fallopian tube.

In *Structure* each ovary consists of a soft fibrous tissue (*Stroma*), abundantly supplied with blood-vessels, imbedded in the meshes of which are numerous small round transparent vesicles in various stages of development; a dense fibrous covering, termed tunica *albuginea*, and an external investment of peritoneal membrane. The vesicles are termed *Graafian*, and are the ovisacs which contain the ova or eggs. As each Graafian vesicle enlarges, it approaches the surface, and, when mature, forms a projection on the exterior of the ovary, beneath the peritoneum, and finally, opening, allows the ovum to pass into the Fallopian tube, and thence to the uterus.

The *Ovum* is a minute Spherical body, indeed microscopic in

size, measuring only $\frac{1}{240}$ to $\frac{1}{120}$ of an inch in diameter ; and yet its structure is somewhat complicated. It consists of a transparent envelope externally, termed *Zona pellucida*, or *vitelline membrane;* within this the *Yolk*, or *vitellus*, a small vesicular body in the substance of the yolk, termed the *germinal vesicle*, and within this the *germinal spot.* The germinal vesicle is about $\frac{1}{720}$ of an inch in diameter, and the germinal spot only from $\frac{1}{3600}$ to $\frac{1}{2400}$ of an inch.

The Fallopian Tubes.

The Fallopian tubes (oviducts) connect the uterus with the ovaries, their function being to transmit the ova from the latter to the former. They are two in number, one on each side, extending from the upper part of the body of the uterus to the side of the pelvis. Each tube is about four inches in length, and, like the uterus, is formed by serous, muscular and mucous coats.

The uterine half of the canal of the tube is extremely small, hardly admitting a fine bristle ; it then enlarges gradually into a trumpet-shaped extremity, which is contracted at its termination, leaving a small orifice (*ostium abdominale*) which communicates with the peritoneal cavity. It is because of this opening at the ovarian extremity of the tube, that internal injections into the cavity of the uterus may be dangerous, if not fatal, in relaxed conditions of the uterine structures. In such cases astringent and caustic drugs have been known to pass through the Fallopian tubes into the cavity of the peritoneum, occasioning inflammation and fever (*peritonitis*).

Mammary Glands.

The *mammæ*, or *breasts* exist in a rudimentary state in males, and have been known, in a few instances and under very peculiar circumstances, to enlarge and even secrete milk. In the female they are two large hemispherical glands, each extending from the sternum or breast bone to the axillæ, and from

the third to the sixth or seventh rib. They are small before puberty, increase during pregnancy, atrophied in old age. The base of each mamma is nearly circular, and is separated from the pectoral muscle only by a thin layer of superficial fascia. Its outer suface is convex, presenting just below the middle of the organ, a small conical prominence, the mammilla, or nipple, which is surrounded by a colored tint. The areola in the virgin is of a delicate rosy hue ; in the second month of pregnancy it enlarges and becomes darker colored, and this dark tinge usually grows still darker during the whole period of pregnancy, becoming in some cases dark-brown, or even black. In cases of suspected pregnancy these changes of color are regarded as important symptoms, although they are by no means conclusive. I have known cases in which the fulness and tenderness of the breasts, the darkening of the areola, and the enlargement of the abdomen, were as perfect and prominent as in ordinary cases of pregnancy, without however, the fact or the possibility of pregnancy existing.

The *nipple* consists of numerous vessels so interblended with muscular fibres as to constitute a kind of erectile structure. Numerous orifices on its summit are the apertures of the lactiferous ducts. Numerous sebaceous glands exist near the base of the nipple and upon the surface of the areola. During lactation these glands become much enlarged, and present the appearance of small tubercles beneath the skin. Their office is to secrete an oily substance which serves as a protection to the nipple in nursing.

CHAPTER III.

Displacements of the Uterus.

These complaints are becoming so common and are so unsuccessfully treated by most physicians, that their nature and principal symptoms ought to be briefly explained in a work of this kind. Those who desire more full information on this subject are referred to the Author's work entitled "Uterine Diseases and Displacements."

The uterus may be displaced downward, forward, or backward, or it may be partially or completely inverted. The displacement downward is termed *prolapsus* or *falling of the womb*, forward *anteversion*, and backward, *retroversion;* when the organ is doubled on itself, the malposition is termed *anteflexion*, or *retroflexion*, as the fundus inclines forward or backward.

In order to comprehend the rationale of uterine displacements, it is necessary to understand the manner in which it is sustained in its normal position in the pelvic cavity, and the causes which render its supports unavailing.

The chief support of the organ is by the attachment of its neck to the upper part of the vaginal canal. It rests in a measure on the upper part of the vagina, assisted somewhat by the various ligaments to maintain its central and upright position. It must be noticed also that the uterus is not fixed in this position; on the contrary it floats loosely in the pelvic cavity, limited in its motions by the attachments and ligaments just mentioned. This moveable condition is essential for the purposes of gestation; during pregnancy the organ is developed to six or eight times its non-pregnant length and breadth, and rises up in the cavity of the abdomen to the umbilicus, enclosing a fœtus weighing, at full term, six or eight pounds.

It is evident therefore, that whatever increases the weight of

the organ, or presses on it from above, or relaxes the vaginal canal below, or in any manner weakens the adjacent muscles, tends directly to its displacement.

Sedentary habits, by weakening the whole muscular system, and especially the abdominal muscles, are causes of displacement. Constipation of the bowels, the invariable result of the ordinary dietetic habits of women, occasions an inflammatory condition of the mucous membrane of the vaginal canal, followed by leucorrhœa or "whites," relaxation of the structures, and more or less prolapsus. The fashionable style of dress, restraining the motions of the chest by corsets and tight lacing, and loading the hips with heavy skirts, presses the bowels down on the uterus, and the uterus sinks lower into the pelvic cavity. It is impossible for any woman who dresses fashionably for many years, especially if she commence before maturity, to be exempt from displacement of the uterus. A majority of such women have its attendant inflammation, and many of them ulcerations superadded.

Another prevalent cause of displacements of the uterus is "forcing" or emmenagogue medicines, such as savin, rue, tansy, preparations of iron, iodine, aloes, &c. These drugs occasion congestion in the organ, and often induce hemorrhage which is mistaken for menstruation. If they are frequently repeated (and many females take the preparations of iron for months or years), the result is permanent congestion of the uterus. The organ is too heavy because of its accumulated blood, and its constant pressure on the vagina causes its fibres to stretch continually until finally the uterus settles down ("falls") one, two, or three, inches, and perhaps, tilts forward or backward, or bends on itself, or even protrudes externally.

The more prominent symptoms of displacement are, a sense of weight and dragging-down in the pelvis, weakness or aching of the small of the back, aggravated by standing; more or less leucorrhœal discharge, and a feeling of "goneness" in the region of the stomach. There is considerable pain, tenderness, heat and smarting at first, but in prolonged cases the

parts have become so paralyzed and benumbed by constant pressure that no local uneasiness is complained of except weakness, and a distressing, dull, heavy, dragging, sensation. These symptoms are always aggravated on going up or down stairs, lifting, or straining in any way.

When the uterus is displaced in the forward direction (anteversion) its pressure on the bladder occasions frequent desire to urinate, and when thrown backward (retroversion) it presses on the rectum causing difficult defecation. In cases of flexion the patient cannot walk without much pain and difficulty, and is frequently unable to walk or stand. Such patients have sometimes been confined to their beds for years, not having the power to sit up for a moment without assistance.

Inversion of the uterus usually happens immediately after childbirth,in consequence of the attachment of the placenta to the fundus of the uterus, or to an extremely relaxed condition of the organ, or pulling injudiciously on the umbilical cord to remove the afterbirth. In some cases a large polypous tumor growing from the fundus of the uterus has inverted the organ.

The remedial plan, in all cases of displacement, consists firstly, in avoiding all the producing causes, and secondly, in promoting in all possible ways the general health. A rigid perseverance in this plan for several months will, in most cases, be attended with great improvement, and in many cases rewarded with good health. Some cases, however, will require one, two, or three years to restore a comfortable degree of health.

In cases of anteversion, retroversion, and inversion, special manipulations are necessary, such as only competent physicians can attend to. To those who desire full professional instruction of the subjects mentioned in this chapter, and in that on Menstrual Disorders, I recommend my work entitled, "Uterine Diseases and Displacements."

CHAPTER IV.

Menstruation.

The period of life at which the process of menstruation commences is called *puberty*. In the majority of cases menstruation commences between the ages of twelve and fifteen, although climate, and personal habits may render it earlier or later. It is well established that stimulating viands, whether of food or drink, or those mental vocations and excitements which are directed more especially to the sexual instinct, as novel-reading, render puberty precocious; and just to the same extent anticipate the normal "change of life," besides abbreviating the period of the individual life correspondingly.

Sufferings incalculable have been imposed on woman because of a mistaken theory in relation to the nature of menstruation. Until a recent period the process has been confounded with or mistaken for the flux or hemorrhage which usually accompanies it; and even now some authors regard the menstrual blood as something peculiar. In ancient times it was regarded as an excretion—a purifying process preparing or cleansing the sexual organs for the work of reproduction. Some modern authors have regarded it as secretion, an idea quite as absurd as that of excretion.

Ovulation.—Menstruation is ovulation. It means the passage of an ovum through the Fallopian tube. An ovum matures once in about twenty-eight days. It then passes from the ovary through the Fallopian tube into the uterus, and if not impregnated and fixed in the uterine cavity, it passes off through the vagina. This process is menstruation. It may or not be attended with bleeding. But the hemorrhage is incidental, if not abnormal. Some women never lose any blood at the menstrual periods, and are said not to menstruate.

But such women have had children, and have been healthy and vigorous; hence they must have *ovulated*. Young girls have suffered of hemorrhage of the uterine system, which has been mistaken for premature menstruation; and old ladies, after having passed the "turn of life," have had an accidental bleeding mistaken for a recurrence of the menstrual function.

It may be questioned whether all the hemorrhage that attends menstruation is not pathological. I can see no reason why woman should bleed because of the process of ovulation more than that animals should. It is perfectly certain that the great majority of women in civilized life bleed excessively, and are debilitated thereby, and the fact that a few women have lived to a good old age, had several children, and enjoyed remarkable health, with no bleeding at all, is conclusive to my mind that all hemorrhage is abnormal. It is well known, too, that women, as a general rule, other circumstances being equal, are feeble precisely in the ratio that they lose blood during menstruation. Hence the common practice of trying to promote menstruation by forcing medicines is a mistake. It tends to induce chronic congestion of the uterus, conduces to displacements, and ulcerations, and establishes the hemorrhagic condition.

It is true that there is a special determination of blood to the uterine system during the process of ovulation, and so there is to the digestive organs after a meal of victuals; but in neither case is the expulsion of the blood required. In the case of digestion the object of a special determination of blood to the digestive organs is, to supply the material for the secretion of gastric juice. In the case of menstruation the object of a special determination of blood to the uterine system is to supply material, in case the ovum is impregnated, for its nutrition and development. In neither case is it necessary that any blood should be lost. It accumulates disproportionately in the vessels of the organs; the material needed is taken from it, and the remainder passes on into the general circulation.

But if these vessels are relaxed and weakened from any cause, or if obstructions exist in the vicinity, interrupting the circulation or preventing the return of blood through the veins to the heart, or if the system is plethoric, the accumulated blood will transude through the coats of the blood-vessels, and hemorrhage be the result. Hemorrhages from the stomach in indigestion would be as common as hemorrhages from the uterus in mis-menstruation, were as much blood determined to the stomach during digestion as is sent to the uterine system during ovulation. But as the digestive function is performed several times a day, while the menstrual function is only performed once a lunar month, a much less quantity of blood is required at any one time, with less liability to extreme congestion. The facts that two ovaries generate eggs, that only one egg at a time is developed normally, and that the number of males and females are nearly equal, are presumptive at least that menstruation is alternate with the ovaries, each evolving the egg on alternate months, and that sex is inherent in the germ, one ovary producing male and the other female ova. This hypothesis also accounts for twins, triplets, &c., of one or of both sexes. In further confirmation of these views, I have had patients affected with painful menstruation, because of disease of one ovary, each other month, while on the alternate months the process was painless and normal.

Impregnation.—Authors do not agree whether impregnation, in the human female, occur normally in the ovary or uterus. It is certain that it may occur in either, or in any part of the Fallopian tube; for all that is required is the contact of the sperm-cell with the germ-cell, wherever that may be. Impregnation, however, is not conception. I am satisfied that the uterus is the organ in which conception (and probably impregnation) usually and normally takes place. The few and rare cases of extra-uterine fœtation seem to be the kind of exceptions that prove the rule. This subject is fully discussed in the author's "Sexual Physiology," to which work the reader who desires a summary of all that is known or believed

in relation to the theory of reproduction is respectfully referred.

The theory of impregnation is one of the unsolved problems in physiology. It is commonly believed that the male semen imparts an impulse, or "vivifying principle" to the ovum, which starts in it the process of development, until then dormant. But this method of "energizing"—this "mode of motion," fails to explain the resulting phenomena, while the resemblance, more or less, to *both parents*, proves to a demonstration, it seems to me, that impregnation is a comminglement, or blending, of the male and female elements in the production of a new being. The ancient and original doctrine, therefore, that each parent contributes equally to the inception of the life of offspring, is undoubtedly correct.

It is commonly supposed that impregnation cannot take place without a certain degree of "orgasm," or pleasurable excitement on the part of the female; but this opinion is entirely erroneous. Impregnation, followed by pregnancy, may occur when the woman is in a state of insensibility. All that is required, as just stated, is the meeting and interblending of the "spermatozoa" of the male with the ovum of the female.

Conception.—Soon after impregnation—how soon is not yet very well understood—the ovum becomes attached to the surface of the structure adjacent, as in ovarian and tubal fœtation, or to the wall of the uterus in normal fœtation. This fixation is conception. The ovum may be impregnated and yet pass off, as in cases of hemorrhage or dysmenorrhœa; or it may be destroyed by the acrid discharge of leucorrhœa; or it may be expelled by violent exertions of various kinds, and no conception result. But if all the conditions are normal, the impregnated ovum soon becomes attached, and the process of development commences. This attachment is conception, properly so termed.

The place where the ovum is attached becomes the central point of the afterbirth—placenta and membranes—which is developed with the embryo for its protection and nourishment.

Usually this place of attachment is at or near the middle of the cavity of the body of the uterus. In some cases the attachment is at the top or fundus of the uterus, rendering the organ liable to inversion after the child is born, if the cord be injudiciously pulled upon. In other cases the attachment occurs at the lower part of the uterine cavity, constituting the "placental presentation" in labor. These facts, taken in connection with the menstrual flux, seem to indicate that the ovum is several days in passing through the uterus, and that, when impregnated, it attaches, at once or very soon, to the adjacent surface. This fact also explains the exceptional or abnormal fœtations termed "extra-uterine."

Sterility.—The idea of barrenness in woman is usually connected with the notion that she is not susceptible of impregnation. This may or may not be the case. But sterility is much more frequently the result of causes which destroy the ovum or remove it, after it is impregnated, than of causes which prevent its impregnation. Excessive hemorrhage during the menstrual period may wash it away, acrid excretions as in leucorrhœa, may destroy its vitality, and inflammation of the mucous membrane of the uterus may prevent its attachment. These circumstances explain why it is that so many women who have been married for years without children, soon become pregnant after recovering good health. And it was fortunate both for them and their offspring, that they did not become pregnant sooner. We must never assume that there is any constitutional defect or organic impediment to pregnancy, so long as the woman suffers of any menstrual or sexual disorder.

But there are cases in which sterility depends on mechanical obstructions or organic imperfections. An imperforate hymen may prevent the passage of the seminal secretion to the uterus; the os uteri may be closed by concreted mucus or fibrinous exudations; the cavity of the *cervix uteri* may be obliterated by a thickening of its mucous lining, the ovaries may be diseased and not develop a fertilizable ovum; or the functions of

individual life may be so feeble, as in chlorosis, that those of reproduction are entirely powerless. In those cases the cause must be ascertained and the treatment predicated accordingly. For further information of this subject the reader is referred to the author's work already named, "Diseases and Displacements of the Uterus," and to his "Pathology of the Reproductive Organs."

One very common cause of sterility, and one which is very generally overlooked, is fatness. A condition of plethora or obesity in unfavorable to generation, and if the obesity be extreme, pregnancy is impossible. Many farmers understand that fat animals will not breed, and the principle applies to the human female. The reason is, the adipose matter crowds the circulating vessels, diminishes the quantity of blood, and weakens muscular action, so that the ovum is imperfectly developed and inefficiently nourished, even if impregnated.

CHAPTER V.

Menstrual Disorders.

Diseases of the sexual organs of woman ("Gyncecology") are confessedly "*opprobrium medicorum*"—the disgrace of medical science. No diseases, on the whole, are treated so unsuccessfully, not to say injuriously, and yet their treatment constitutes considerably more than one half of all the business of the medical profession. This is a fearful fact, not only in view of a false healing art, but in view of the general ignorance of women in relation to those circumstances and habits which produce or destroy their health. There is no reason, except erroneous modes of life, and medical miseducation, why women should not be as healthy as men, why girls should not be as vigorous as boys, nor why the human mother should not be as capable of nursing and feeding her progeny as the animals are. Reason, superadded to instinct, ought not to diminish but to exalt her capacity in this respect. And so it would if she would follow the dictates of instinct and reason instead of the mandates of fashion.

The increasing prevalence of the diseases of women is appallingly attested by the rapidly increasing gynceological literature. The works that have been written on this subject within a quarter of a century, would make a library of very respectable size; while within a few years have appeared the ponderous volumes of Scanzoni, Columbiat, Hewitt, and Thomas, the last two named being latest in date, and largest in size, extending to nearly one thousand pages, with hundreds of illustrations. One of the late works (Bennet's) devotes nearly four hundred pages to the subject of "Chronic Inflamations of the Neck of the Uterus." Surely there is something wrong somewhere. Either the fashionable habits of woman-

kind are going on from bad to worse, or the fashionable methods of medicating their maladies are more than failures. I think the general ill-health of woman is due to both causes.

The very latest work on the subject, that of Professor T. Gaillard Thomas, M.D., of the New York College of Physicians and Surgeons, recommends to the student, in addition to his own work of 784 pages, and more than 300 illustrations, the formidable list of thirty other standard authors!

As Health Reformers and Hygienic physicians are so frequently accused of fanaticism or exaggeration on the subject of unhygienic habits, it may be well to refer to what Dr. Thomas says on this subject. The following quotations, mainly on the subject of dress, are quite as strong, and a little more plain and outspoken than any thing that Hygienic authors have yet published.

"The dress adopted by the women of our times may be very graceful and becoming, it may possess the great advantages of developing the beauties of the figure, and concealing its defects, but it certainly is conducive to the development of uterine diseases, and prove not merely a predisposing but an exciting cause of them. For the proper performance of the functions of respiration, an entire freedom of action should be given to the chest, and more especially is this needed at the base of the thorax, opposite the attachment of the important respiratory muscle, the diaphragm. The habit of contracting the body at the waist by tight clothing confines this part as if by splints; indeed, it accomplishes just what the surgeon does who bandages the chest for a fractured rib, with the intent of limiting thoracic and substituting abdominal respiration.

"As the diaphragm, thus fettered, contracts, all lateral expansion being prevented, it presses the intestines upon the moveable uterus, and forces this organ down upon the floor of the pelvis, or lays it across it. In addition to the force thus excited, a number of pounds, say five to ten, are bound around the contracted waist, and held up by the hips and the abdominal walls, which are rendered protuberant by the compression

alluded to. The uterus is exposed to this downward pressure for fourteen hours out of every twenty-four ; at stated intervals being still further pressed upon by a distended stomach.

"In estimating the effects of direct pressure upon the position of the uterus, its extreme mobility must be constantly borne in mind. No more striking evidence of this can be cited than in fact, that in examining it by Sims's speculum, if the clothing be not loosened around the waist, the cervix is thrown so far back into the hollow of the sacrum as to make its engagement in the field of the instrument often very difficult, and that attention to this point in the arrangement of the patient will at once remove the difficulty. While the uterus is exposed by the speculum, it will be found to ascend with every expiratory effort, and descend with every inspiration ; and so distinct and constant are the rapid alterations of position thus induced, that in operations in the vaginal canal the surgeons can tell with great certainty how respiration is being affected by the anæsthetic employed. An organ, so easily and decidedly influenced as to position by such slight causes, must necessarily be affected by a constriction which, in autopsy, will sometimes be found to have left the impress of the ribs upon the liver, producing depressions corresponding to them.

"No one will charge me with drawing upon my imagination, even in the remotest degree, for the details of the following picture, for a little reflection will assure all of its correctness. A lady who has habitually dressed as already described, prepares for a ball by increasing all the evil influences which result from pressure. Although she may be menstruating, she dances until a late hour of the night, or rather an early hour of the morning. She then eats a hearty supper, passes out into the inclement air, and rides a long distance to her home. This is repeated frequently during each season, until advancing age or the occurrence of disease puts an end to the process.

"A great deal of exposure is likewise entailed upon women by the uncovered state of the lower extremities. The body is covered, but under the skirts sweeps a chilling blast, and from

the wet earth rises a moist vapor, that comes in contact with limbs encased in thin cotton cloth, which is entirely inadequate for protection. It is not surprising that evil often results to a menstruating woman thus constantly exposed.

"To a woman who has systematically displaced her uterus by years of imprudence, the act of sexual intercourse which, in one whose organs maintain a normal position, is a physiological process devoid of pathological results, becomes an absolute and positive source of disease. The axis of the uterus is not identical with that of the vagina. While the latter has an axis coincident with that of the inferior strait, the former has one similar to that of the superior. But let the uterus be forced down, as it is by the prevailing styles of fashionable dress, even to the distance of one inch, and the natural state of the parts is altered. The cervix is directly injured, and thus a physiological process is intensibly merged into one productive of pathological results. How often do we see uterine disease occur just after matrimony, even where no excesses have been committed! It is not excessive indulgence in sexual intercourse which so often produces this result, but the indulgence to any degree on the part of a woman who has distorted the natural relations of the genital organs."

Chlorosis.—When the girl does not menstruate at the usual period of life, and manifests the indictations of defective development in a general frailty, the condition is termed chlorosis. From the pale, wan, bilious, and frequently greenish complexion, the affection has been termed "green-sickness." Chlorosis is not strictly disordered menstruation, for ovulation does not occur, nor are there any symptoms of the process. This malady illustrates the position I have heretofore advanced that, where the functions of the individual life are feeble, those of the social life will be still more defective. In chlorosis there is no attempt at the evolution of a germ-cell or egg, although the ovaries may have developed to nearly the normal size. The patient is cachectic. Her bowels are constipated, liver torpid, skin inactive, digestion imperfect, and blood deficient.

And if the family physician is consulted he will probably diagnosticate, "want of iron in the blood," as though blood was a chemical compound instead of a vital combination, and prescribe, among numerous other drugs, some of the preparations of iron, as though any living organism, except the vegetable kingdom, could appropriate, or in any manner use inorganic substances.

Chlorosis does not consist in a want of any particular element, much less any inorganic element, but in the want of nutritive power. The patient needs power to digest and assimilate, not stimulating nor poisoning. And this will be found, if found at all, in Hygienic agencies; never in drug medicines. The exercise of that common sense with which almost every woman is endowed, would do more for chlorotic patients than all the medical books that were ever written. They need abundance of exercise in the open air; frequent exposure to sunshine, a plain and simple dietary, in which unbolted and unfermented bread with plenty of fruit are the staples, and a daily ablution with tepid water. Special conditions, symptoms, or complications, may require special attention; but the above plan, perseveringly carried out, is all the remedial resource required in the great majority of cases. When pains in the ovarian regions indicate the menstrual effort, it may be judiciously promoted by warm fomentations and tepid hip-baths, employed once or twice a day.

Obstructed Menstruation.—When the menstrual flux does not occur at the menstrual periods, although the other evidences of ovulation exist, and the patient suffers in general health, or of local pains, the affection is termed obstructed menstruation. It has two forms, termed *retention* and *suppression*, to either of which the term *amenorrhœa* has been applied by authors. But it must be kept in mind by those who read medical books on this subject that nearly all of the causes mentioned, the symptoms attending, and the treatment prescribed, pertain to the presence or absence of the incidental hemorrhage, and not to menstruation proper, or ovulation.

In what is termed *retention of the menses*, the blood is retained in the upper part of the vaginal canal by an imperforate hymen, producing, at the monthly periods, a sense of weight or heaviness, swelling, and often a dropsical condition of the feet and ankles at night, and a fullness of the eyes and face in the morning. The treatment is mechanical or surgical. The membrane should be perforated or incised. The best operation is a crucial incision with a scalpel or lancet. The operation may readily be performed through a speculum, and is neither painful, dangerous, nor difficult. Any expert and handy nurse can perform it as well as the regular surgeon.

The term *suppressed menstruation* is applied to the suspension of the menstrual flux after it has occurred one or more times. The exciting causes are usually colds, over-exertion, mental shocks, or some other incidental occurrence. The chief symptoms are headache, difficult breathing, and palpitation of the heart. In severe cases there are cold extremities, sense of fullness and heat in the pelvis, and "rush of blood" to the head. As this affection depends on obstruction rather than debility, it may be relieved by fomentations to the lower abdomen, warm hip-baths, and hot and cold foot-baths. When the whole body happens to be feverish, the wet-sheet pack bath for an hour, the full warm bath for ten minutes, or the vapor bath for twenty minutes, will be found useful.*

Painful Menstruation.—When the menstrual flux is attended with severe pain for one or more days, the affection is known as *Laborious Menstruation*, or *dysmenorrhœa*. It is usually attended with considerable, and sometimes with excessive bleeding, but in some cases the hemorrhage is slight. In severe cases the patient will suffer excruciating agony for several days, and only find relief in hot applications, to relax the whole muscular system. The peculiarity of this form of mismenstruation consists in an inflamed condition of the mucous membrane of the uterus, attended with a fibrinous exudation analogous to

* For full instructions in relation to all forms of bathing processes, see the author's recent work, entitled, "The Bath," &c.

that of diphtheria or croup. This exudation often concretes on the mucous surface, and is expelled in fragments, or in the shape of a sac or cyst, attended with bearing-down pains like those of labor. When the adhesion is very firm the uterus will contract violently and spasmodically to remove it, and for hours, perhaps days, the sufferings of the patient will be terrible. The expulsion of the sac above mentioned has not unfrequently been mistaken for abortion. In mild cases the patient will suffer pain but a few hours, but will be weakened by the succeeding hemorrhage. The milder cases do not prevent pregnancy, which, by arresting the morbid excretion, proves an effectual remedy. In the severer cases pregnancy is impossible.

The successful treatment of dysmenorrhea requires the nicest adaptation of the bathing processes to the conditions of each case, and a rigid and persevering Hygienic regimen applicable to all cases. Full, hip, and foot-baths are all useful; but each should be of the temperature most agreeable to the patient. As a general rule all bathing processes should be warmer in the early or spasmodic stage, and cooler in the later or hemorrhagic stage. Vaginal injections are also serviceable, and the temperature may be warm, tepid, or cool, as indicated. Drinking freely of warm water will often assist in overcoming the spasmodic action.

All that can be done during the menstrual period is to relieve the pain as much as possible. The removal of the inflammation must be attended to between the paroxysms. If the patient be too feeble to take much active exercise, passive should be substituted, as riding, swinging, sailing, &c. The dietary can hardly be too plain. All irritants and condiments should be avoided, and even milk and sugar abstained from. Hard water is especially injurious in these cases, and the saleratus and soda so commonly used in cooking are very pernicious.

Excessive Menstruation.—This term is a misnomer, for menstruation, being ovulation, can never be excessive except when

two or more ova are evolved simultaneously. What medical authors mean by excessive menstruation is simply unusual hemorrhage—*menorrhagia*. It may be caused by obstruction, forcing the blood into the uterine vessels, or preventing its return, or by a weakened and relaxed condition of the vessels themselves. In some cases the bleeding occurs once in two or three weeks, having little or no regard to the ovulation. Indeed, this may occur at the usual periods, without noticeable pain, flux or disturbance of any kind, while the hemorrhage may occur quite irregularly as regards time and quantity.

In the treatment of menorrhagia the dietary should be as rigidly simple as in cases of dysmenorrhœa, but the bathing processes should be as cool as the patient can bear without chilliness ; and the vaginal injections cool or cold. In cases of severe flooding pieces of ice may be introduced. The patient should keep the horizontal position, and avoid all sources of bodily or mental disquiet. When there is a sense of heat in the abdomen or pelvis, cold wet cloths should be applied, and frequently renewed. Some authors have recommended the free use of iced-water, ice-cream, &c., to restrain uterine and other internal hemorrhages, as well as the discharges of diarrhœa and cholera. But I am sure such practice is erroneous. It tends to determine still more blood from the surface to the congested internal organs, and to aggravate the hemorrhage. I have known many persons troubled with bleeding piles resort to iced-water and ice-cream, but always with injurious consequences.

Vicarious Menstruation.—Another misnomer, for ovulation never takes place elsewhere than in the ovaries ; but some patients are affected with hemorrhage from some other part of the body than the uterus, at the menstrual periods, and to this the term *vicarious* has been applied. Bleeding, during the process of ovulation, may occur at the nose, mouth, lungs, stomach, bowels, kidneys, or from ulcers or abraded surfaces. No special medication is required. Restore the general health and this form of mismenstruation will disappear.

Abnormal Cessation of Menstruation.—The "change," or

"turn of life," in this climate, usually occurs from the fifty-fifth to the fifty-eighth year of age, and when attended with some new disease or abnormal condition is termed *irregular*. In these cases the menstrual flux may be irregular and changeable in time and quantity, or dropsy, glandular tumors, or spurious pregnancy may appear. The hemorrhage is often alternated with leucorrhœa. In very plethoric persons apoplectic symptoms may be present.

As with vicarious mismenstruation, the abnormal cessation only requires strict attention to the general health, with such measures to restrain hemorrhage as have already been indicated.

Leucorrhœa.—The discharge known as "whites" is the result of relaxation or inflammation of the uterine and vaginal mucous membrane. In the former case the discharge is mucous, and in the latter muco-purulent, and attended with more or less heat, smarting, and often a scalding sensation during micturition. Constipation of the bowels is the most efficient of any one producing cause of this distressing ailment. "A majority of women," says Bedford, in his Obstetrics, "pay little or no attention to the action of the bowels," and if their habits are sedentary, their diet mainly bakers' bread and cakes, shortcake, butter, biscuits, candies, and ice-cream, and their dress fashionable; and if, moreover, novel reading or some similar dissipation which overheats the head and chills the lower extremities, is superadded, the female has a combination of causes that never fails to produce leucorrhœa, and usually, also, ulcerations and displacements.

In relation to the treatment, all the remarks made under the heads of chlorosis and dysmenorrhœa will apply to leucorrhœa, with the exception of the heating appliances to allay pain. Tepid, cool, and sometimes cold hip-baths may be indicated, and cool or cold vaginal injections, or ice, as recommended for menorrhagia, are adapted to different cases, the rule here, as everywhere being, the greater the heat of the part affected the cooler should be the temperature of the water employed.

CHAPTER VI.

Pregnancy.

Pregnancy may be distinguished into uterine, extra-uterine and numerical, as the fœtus is developed within or without the uterine cavity, or as the pregnancy consists of one or more fœtuses or tumors.

Uterine pregnancy may be true or false, as the uterus contains a developing ovum or a morbid growth.

Extra-uterine pregnancy may exist in the ovary, Fallopian tube, abdominal cavity, or in the meshes of the muscular fibres of the uterus.

Numerical pregnancy may be single, plural, or complicated, as it consists of one fœtus, of two or more, or of one or more fœtuses in connection with a tumor or morbid growth. The following table will exhibit these distinctions at a glance:

Uterine.	True—Fœtation.
	False—Non-fœtation.
Extra-Uterine.	Ovarian.
	Fallopian.
	Abdominal.
	Interstitial.
Numerical.	Single.
	Plural.
	Complicated.

Signs of Pregnancy.

Of the many symptoms that pregnancy exists, only two, or at most three, can be regarded as conclusive; all others are either presumptive or probable; hence in doubtful cases, and in cir-

cumstances involving character, social position, or prospective interests, we cannot be too careful in giving an opinion. The various indications of pregnancy may be classified and tabulated as follows :

Presumptive.	Non-Menstruation. Nausea and Vomiting. Salivation. Mammary changes. Secretion of Milk. Areola.
Probable.	Abdominal changes. Descent of the Uterus. Œdema. Shortening of Cervix. Hemorrhage, or "show."
Positive.	Quickening. Ballotement. Pulsation of cord.

The presumptive and probable signs of pregnancy are liable to great diversity, according to the health and personal habits of the woman. Thus "morning sickness" for example, which is so common a symptom, seldom troubles women who diet properly ; and again, the "suppression of the menses"—meaning the cessation of the monthly hemorrhage—is frequently absent, in actual pregnancies, the hemorrhage continuing as usual during a part or the whole of the period of gestation.

Cazeaux, who has written the most scholarly and accurate work extant on Midwifery, gives the following statement of the rational signs of pregnancy embracing the whole period :

First and Second Months.—Suppression of the menses (many exceptions) ; nausea and vomiting ; slight flatness of the lower part of the abdomen ; depression of the umbilical ring ; swelling of the breasts, accompanied with sensations of pricking and tenderness.

Third and Fourth Months.—Continued suppression of the

menses (a few exceptions); frequently, continuance of the nausea, and sometimes vomiting; less depression of the umbilical ring; augmented swelling of the breasts; prominence of the nipples, and slight discoloration in the areola.

Fifth and Sixth Months.—Sensation of quickening motion in the abdomen; suppression of the menses continued (some rare exceptions); vomiting and nausea cease (a few exceptions); considerable development of the whole sub-umbilical region; a convex, fluctuating, rounded abdominal protuberance, salient particularly in the middle line, and sometimes exhibiting the fœtal inequalities; the umbilical depression is almost completely effaced; the discoloration in the areolæ is deeper; tubercles elevated.

Seventh and Eighth Months.—Suppression of the menses continued (exceptions very rare); active movements of the fœtus; disorders of the stomach cease (exceptions rare); abdomen more voluminous; sometimes protusion or pouting of the umbilicus; numerous discolorations of the skin of the abdomen; sometimes a varicose and dropsical condition of the vulva and lower extremities; extended and deeper discoloration of the areolæ; breasts still larger; nipples more prominent; sometimes flow of milk.

First Fortnight of Ninth Month.—Vomiting frequently recurs; abdominal swelling increased, rendering the skin very tense; difficulty of respiration; all other symptoms increase in intensity; sometimes pain in the back, with other irregular pains.

Last Fortnight of Ninth Month.—Vomiting often ceases; abdomen fallen; respiration easier; great difficulty in walking; frequent and ineffectual desire to urinate; hemorrhoids; increase of the varicose and dropsical state; pains in the loins.

It will be noticed that some of the above symptoms are generally present, and others generally absent, and still others present or absent in exceptional cases. Many of them, therefore, are no part of normal pregnancy, but are attributable to ill health or unhygienic habits. The "great difficulty in walking," mentioned as belonging to the last days of gestation, does

not belong to normal pregnancy. Many women are on their feet, and attending to their ordinary work or duties until the moment of the commencement of actual labor. I have known several such cases. Hemorrhoids are never caused by pregnancy, but are always the consequence of prolonged constipation. When they exist, however, they are liable to become very much aggravated during the last days of pregnancy.

With healthy women the course of symptoms is as follows: On the occurrence of conception the menstrual flux ceases entirely, as do all indications of ovulation. In the second month the uterus settles down a little in the cavity of the pelvis, causing a slight flatness of the lower part of the abdomen, and some degree of depression of the umbilicus. There is also more or less enlargement of the breasts, with a feeling of tenderness. During the third and fourth month the depression of the umbilical ring gradually disappears, the breasts continue to enlarge regularly, prominences appear on the nipples, and the areolæ become slightly discolored. About the middle of the fourth month, but sometimes a little later, the motions of the child are felt in the abdomen, which motions are termed *quickening*. These motions may be very distinct and unmistakable, or very indistinct and uncertain, as the woman is thin or plethoric, or as the uterus contains a less or greater quantity of fluid. Soon after quickening there is a more considerable and rapid development of the whole abdominal region below the umbilicus. During the sixth month and especially toward the end of it, the middle of the abdomen becomes rounded and prominent, and when there is not too much fluid surrounding the fœtus, its inequalities may be perceived by external manipulation, and sometimes by ocular inspection. In the seventh month the umbilical depression is effaced (and sometimes in the sixth month), the areolæ deepen in color, the abdomen becomes more prominent. In the eighth month all of these symptoms become more prominent, the umbilicus pouts, and sometimes milk is secreted. In the ninth month the enlargement of the abdomen renders the skin tense, and in latter part, the

upper part of the abdomen seems somewhat fallen, and if there was any appreciable difficulty of respiration previously, especially on making any violent or unusual exertion, it becomes easier. In the last days of pregnancy there are usually slight irregular pains or cramps in the pelvis, loins, and back, not sufficient, however, to disable the patient from performing her ordinary duties, and sometimes scarcely noticed unless the patient's thoughts are directed to the subject.

Rationale of Quickening.—A very erroneous view of the rationale of what is called quickening, has long been entertained. It has been regarded as indicating the endowment of the animal life, or of the mental or soul element. Until then, fœtal life was regarded as merely vegetative, and in no sense mental. The mistake consisted in supposing muscular motion to be under the influence of volition instead of organic instinct. The fœtus is as much vitalized, and as much vegetative, at one period of development as another, from conception to birth. In the embryo state all its actions are instinctive. The soul and mental powers, whatever their nature or essence may be, are manifested only through the organs of the external senses, and these are not in action until the process of respiration commences. This idea is beautifully, although allegorically expressed in the familiar Bible quotation: "And God breathed into his nostrils the breath of life, and Man became *a living soul.*"

The crime of destroying fœtal life after quickening (for then the fœtus becomes a *child,*) is adjudged to be murder in the penal statutes of some nations, on the ground that, at that time, the transition from merely organic to human life occurs. So far as criminality is concerned, it is the same at any time before birth, after conception has taken place. From conception to birth is a continual process of development; but when the muscular system is sufficiently developed, instinctive or "reflex" movements take place with the limbs whose motions, being felt by the mother, are termed quickening.

Pregnancy may exist without any period of quickening; that

is to say, the motions of a living and viable child may be so feeble as not to be noticed; while spasmodic contractions of the abdominal muscles, or of the intestinal canal, may be mistaken for motions of a child.

Ballottement and Pulsation of the Cord.—In those few cases in which quickening is absent or too feeble to be decisive, and it is important to determine the fact whether pregnancy exist, resort should be had to ballotement, which means the movement of the body of the fœtus, as it floats in the amniotic fluid. The detection of the ballottement is very easy; the index finger of one hand is to be pushed to the lower part of the uterus just above the os uteri, and the other hand, expanded, applied to the abdomen, grasping the fundus of the uterus; then by pressing the finger suddenly upward and forward against the body of the uterus, the fœtus will ascend or move away from the finger, but immediately return. No tumor, nor other condition than pregnancy, can occasion a similar motion from and against the finger, hence ballotement is decisive.

Pulsation of the umbilical cord is also decisive, when it can be detected; but as this is sometimes impossible, and generally uncertain, while ballottement is attended with no difficulty, it is not worth while to dwell upon it.

Duration of Pregnancy.—The normal period of pregnancy is usually reckoned at ten lunar months, forty weeks, or two hundred and eighty days. Some authors, however, have collected statistics which seem to anticipate this time for a few days approximating the popular period of nine calendar months, which is 273 days. But there must always be some variation in consequence of the different habits of women, constitutional peculiarities, and various other circumstances.

The extreme duration of pregnancy has long been a moot question, as has also the earliest period of pregnancy at which a viable child can be born. The general rule seems to be well settled that, of children born at the end of the seventh month, a majority may live, while of those born before that time a majority will die; hence, in cases of deformed pelvis, or other infirmi-

ties or diseases which render it impossible for the mother to be safely delivered at full term, premature or forcible delivery is effected at this time, as affording both mother and child a chance for life.

The question of the legitimacy of a child and heir is sometimes presented for adjudication in the courts. One of the most notorious which is recorded in works on Medical Jurisprudence, is known as the Gardner Peerage Case, which was tried in the British House of Lords in 1825.

"Allen Legge Gardner, the son of Lord Gardner, by his second wife, petitioned to have his name inscribed as a Peer on the Parliament Roll. The Peerage, however, was claimed by another person—Henry Fenton Tadis—who alleged that he was the son of Lord Gardner by his first and subsequently divorced wife. It was contended that the latter was illegitimate; and in order to establish this point, the evidence adduced was partly medical and partly moral. Lady Gardner, the mother of the alleged illegitimate child, parted from her husband on board of his ship the 30th of January, 1802. Lord Gardner went to the West Indies, and did not again see his wife until 11th of July following. The child, whose legitimacy was disputed, was born on the 8th of December of that year. Therefore, the plain medical question, taking the extreme view, was, whether a child born 311 days after the alleged conception could be legitimate. The affirmative answer to this question would present a remarkable case of premature, or a still more remarkable case of protracted birth. There was no pretence of miscarriage or premature delivery, the child having been fully matured at birth. The main question, and the one adjudicated was, whether gestation could be protracted 311 days? Numerous medical witnesses testified in the case, comprising the principle obstetricians of Great Britain. But, as usual in medico-legal questions, their evidence was conflicting. Five of them denied the possibility of so prolonged a period of gestation; while eleven of them expressed the opposite opinion. The decision of the House of Lords was in favor of the five witnesses, and against

the eleven. But the judgment was evidently more influenced by the moral than the medical testimony, as it was proved that Lady Gardner, after the departure of her husband, sustained adulterous relations with Mr. Tadis.

We have testimony, abundant and unimpeachable, that gestation may be prolonged beyond 280 days; but to fix any day between that and 311, and say that gestation cannot be prolonged one day more is certainly presuming too much. Yet the probabilities are that, not one case in a hundred thousand ever reached 300 days. But to be on the side of mercy in doubtful cases, the Code Napoleon has declared that a child born 300 days after the departure or death of the husband, shall be deemed legitimate. The following extract from Bedford's Obstetrics shows what possibilities in nature, or what probabilities exist for mistakes in the data of knowledge:

"Dr. Simpson records, as having occurred in his own practice, cases in which the period reached 336, 332, 324, and 319 days. Dr Merriman, 298 days; and Prof. Murphy, 297 days. Dr. Atlee reports two cases which nearly equalled 356 days each; and Prof. Meigs publishes a case, which he deems entirely trustworthy, of 420 days."

Liability to Pregnancy.—The ovum is liable to impregnation from the moment it emerges from its ovarian bed, until it is expelled from the os uteri. But the time occupied in the passage of the ovum from the ovary to the external world varies greatly with different women. With women of the more vigorous constitutions and better conditions of health the average time may be ten or twelve days; but with the more feeble, and especially those suffering of local debility of the reproductive organs, the time may be extended to twenty days. The time, therefore, in which women are liable to pregnancy varies from one third to two thirds of each calendar month. The average time is undoubtedly less then half of each month. The statistics that I have collected on this subject make it about twelve days. It is probable that the menstrual flux ceases very soon after the ovum has reached the cavity of the uterus, hence the time that every

woman is most liable to conception is immediately after its cessation. Those who desire to become pregnant should therefore avail themselves of this fact, observing at the same time all hygienic rules, and avoiding all sources of dissipation, bodily fatigue, or mental worryment.

Extra-Uterine Pregnancy. The limits of this work will not permit of the detailed treatment of the rare and extraordinary cases which occur in obstetrical practice, and require special or surgical treatment. In all such cases competent assistance must be sought. But the conditions and indications of such cases ought to be understood by all women who aspire to or are liable to motherhood. Such knowledge may often serve to allay apprehensions, especially in first cases, of imaginary difficulties and dangers. It may be a consolation also to know that there are many thousands of uterine pregnancies to every extra-uterine one.

In *ovarian pregnancy* the impregnated ovum becomes attached to the ovary, and is there developed. It is not difficult to understand that, extreme congestion of the organs at the time, with the increased vital activity which is always coincident with impregnation, might prevent the ovum from moving, and supply the material for fixing it to whatever part or structure it then happened to be in contact with.

In *Tubal or Fallopian Pregnancy*, the ovum may become attached and developed in any part of the tube. Thus far medical authors have recorded a greater number of tubal pregnancies on the left than on the right side; but I can see no practical bearing of this record.

In *Abdominal Pregnancy*, the impregnated ovum becomes deposited in some part of the abdominal cavity, and attaching itself to whatever structure is adjacent, passes through certain stages of development. It is the least fatal of all the forms of extra-uterine fœtation.

In *Interstitial Pregnancy* the embryo is developed in the muscular structure of the uterus. In some way the ovum becomes imbedded in the muscular fibres of the organ, instead

of remaining within its cavity. Many hypotheses have been advanced to account for this malposition of the impregnated egg, but none of them either satisfactory or instructive. The probability seems to be that a loose flabby condition of the organ, or superficial ulceration, is the essential cause. That the lodgment of the ovum in a depression or excavation caused by ulceration, would, by being soon covered by fibrinous exudations, or "coagulable lymph," and in the subsequent process of granulation and cicatrization, become embedded in the uterine wall, is certainly easy to imagine, and, moreover, has "probability in view."

In all the forms of extra-uterine pregnancy, the development of the fœtus and its appendages progresses in the same manner as in uterine pregnancy, with perhaps, some slight exceptions in the structure of the placenta. The ovum is enclosed in a cyst, which differs somewhat in the different kinds of extra-uterine pregnancy. This cyst represents the uterus. It may rupture at any time and cause dangerous hemorrhage. In all of these cases the uterus undergoes more or less enlargement, and most or all of the early symptoms of pregnancy will be present. But the fœtal development rarely proceeds to the full term. It seldom goes beyond the fifth month, and is more frequently arrested at a much earlier period. But there have been instances in which the abnormal development has remained for several years, after becoming devitalized and changed into a fatty or stony matter, or become exsiccated and shrivelled.

The special signs of extra-uterine pregnancy are, a tumefaction of the part where the ovum is lodged, with a sense of heat, fulness, weight, and pain; all of these symptoms, however, are present in ovarian or other tumors. Until the period of quickening it may not be possible, on account of the enlargement of the uterus, to determine that pregnancy exists, or that it is extra-uterine. But at this time the ballottement will decide. Intermittent and spasmodic pains, sometimes attend the later period of extra-uterine pregnancy, somewhat analogous to labor pains.

For the treatment of extra-uterine pregnancies several operations have been proposed, the best and safest of which is that of making an abscess over the tumor. By this means the malorganized mass may be removed by the process of suppuration, and the part heal by granulation.

False Pregnancy.—This term has been employed in a very indefinite sense, and made to embrace all those substances expelled from the uterus which are called *moles.* But moles are divided into the *true* and the *false.* The true mole is a degenerated ovum, blighted at some stage of its development, and is hence the product of conception, and not a case of non-fœtation or false pregnancy. The transformation of the fœtus to the mole is doubtless one of the manifold results of inflammatory action, which destroys the vitality of the fœtus, and then produces, as in cancers, polypi, hydatids, vesicles, cysts, false membranes, &c., morbid changes of the structural elements.

In most cases, after the death or metamorphosis of the fœtus the uterus will expel it, amounting practically to a case of abortion or still-birth; but in some instances, the mole will remain for years, and perhaps be expelled at some future time after normal childbirth, or months or years thereafter. Again, in a case of twins, one ovum may be fully and normally developed, and the other degenerate into a mole; and this mole may remain in the uterus months or years after the birth of the developed ovum. The fancied resemblance of moles to certain repugnant featured animals, as lizards, frogs, monkeys, screech owls, &c., is doubtless attributable to the fact that they are formed of a variety of sizes, shapes, and figures.

Spurious moles embrace every kind of tumor or substance formed in the uterus without impregnation, as polypi, fibrous growths, blood clots, membranous concretions, hydatids, acephalocysts, &c. Blood clots, and membranous cysts have been mistaken for abortions, with which, indeed, they are very liable to be confounded, unless the physician is careful in his diagnosis, and as these masses are frequently expelled by

unmarried women, and even young girls, great caution is requisite in forming a judgment, and very great caution in expressing it. I have known several cases of dysmenorrhœa in which blood clots were formed and expelled, by the same uterine efforts that characterize labor; and the clots were so firm and solid as to excite the suspicion of the attendants that abortion had occurred. Some of these cases occurred with married and some with unmarried women.

The term, *false pregnancy*, is only properly applicable to tumors and morbid growths that occur independent of sexual intercourse.

CHAPTER VII.

Miscarriage.

The latest authors apply the term, *abortion*, to the expulsion of the impregnated ovum at any time after conception before the termination of the sixth month, and the term, *premature labor*, to its expulsion at any time between the end of the sixth month and the ninth. The term *miscarriage* comprehends both.

Causes of miscarriage.—The common causes of miscarriage are general or local debility, violent exertions, bodily injuries, mental shocks, excessive sexual indulgence, &c. Drastic purgatives, and mercurial medicines frequently occasion abortions. Large doses of quinine, tartar emetic, and other potent drugs administered in fevers very frequently cause the uterus to expel its contents at any stage of gestation. Frequent bleedings are mentioned by authors as among the causes. Emmenagogue medicines, cod liver oil, and the preparations of iron absurdly called "blood food," and common table salt, all tend to produce a putrescent condition of the blood, relaxation of the muscular tissue, and thus predispose to abortion. After miscarriage has once happened it is very liable to recur at about the same period of pregnancy, and thus become a habit, not easily interrupted without a rigid perseverance in "a life according to the laws of life."

Symptoms of miscarriage.—Pain and hemorrhage are the prominent symptoms, and constitute the diagnosis of miscarriage. They are preceded by an unusual sense of languor, uneasiness, and weariness, with aching or cramping pains in the back. These symptoms are succeeded, after a few hours or days, by a slight discharge of mucus or blood from the vagina, and bearing-down pains. It is important to notice that, to indicate

the commencement of the uterine effort to expel its contents, the pains have the *bearing-down* quality, as in labor at full term. They are owing to the same cause, contraction of the uterus. These pains are first felt in the back, extending around the loins to the abdomen, and down the thighs, recurring at regular intervals, and increasing in strength and frequency. In a majority of cases the pain is as severe and more prolonged than in labor at full term.

Another frequent cause of miscarriage, not mentioned in medical books, and seldom if ever thought of by pregnant women, ought to be mentioned, I mean the use of ice-cream. Many women in the cities and large villages indulge in it daily, and some several times a day. It is also taken in connection with iced-water as a beverage, and as ice-cream is thirst provoking, the more of it taken the more cold water will be taken also; and to aggravate the evil, those who indulge the most in cold iced-water and ice-cream are apt to indulge freely also in hot drinks—tea, or coffee, or both. Hot drinks relax the blood vessels, and very cold ingesta determine the blood to the central organs, thus inducing or aggravating visceral congestion, and predisposing to miscarriage. It is a prevalent opinion that ice-cream and large draughts of very cold water have a tendency to contract the muscular fibres and blood-vessels, and thus restrain internal hemorrhages. But the practice is based on an erroneous theory. In order to restrain internal hemorrhage the blood should be determined *to*, not *from* the surface.

In some cases the ovum or fœtus is expelled with little pain and slight hemorrhage; and sometimes the fœtus is expelled while the enveloping membranes and placenta are retained for several days, to be passed off finally in a disorganized and putrescent condition with the lochial discharge. The hemorrhage attending miscarriage may be much or little, but it seldom continues after the expulsion of all of the contents of the uterus. As a general rule, after the first month, the flooding is less the nearer gestation approaches maturity.

Differential Diagnosis.—It is important to ascertain, in many cases, whether the hemorrhage be from the uterus, and if so whether it indicates miscarriage or not. Bleeding during pregnancy may be occasioned by a polypous tumor, or a cancerous growth or erosion, or it may be only menorrhagia continued into or through the period of pregnancy, or the "menstrual flux," so-called, during pregnancy. Bedford says, "The discharge may be nothing more than menstruation, which sometimes occurs in pregnancy." It is time that the Professors of Obstetrics in our medical colleges, and the authors of our standard text-books on "The Principles and Practice of Midwifery," understood that bleeding is not menstruation, and that menstruation does not occur in pregnancy.

The character of the pain is almost always a pathognomonic or decisive symptom. It is recurrent, distinctly paroxysmal, with intervals of perfect quiet, invariably centers towards the loins and hypogastric region (lower and middle part of the abdomen), and is, moreover, accompanied with more or less of the *bearing-down* sensation peculiar to expulsive uterine contractions. Again, in menstruation attended with pain, and in what is called menstruation during pregnancy, the pain precedes the hemorrhage, and ceases as soon as the discharge occurs. In miscarriage the pain is not lessened by the hemorrhage.

Prognosis.—Although miscarriages are exhaustive of the patient's vitality, they do not often terminate fatally. The principal danger is from excessive hemorrhage; but as the blood-vessels, especially in the earlier stages of pregnancy, are not very much developed, the bleeding from them may be prolonged for days, or even weeks, without causing death. Again, the patient in miscarriage is less liable to the complications of diseases, especially convulsions, puerperal fever, and inflammatory affections, than in ordinary cases of delivery at full term; not, however, because the normal childbirth is more dangerous than abnormal expulsions of the fœtus, but because of the unhygienic habits of most women during the latter months

of pregnancy, and the pernicious methods of medication which are generally resorted to in order to relieve the maladies or inconveniences incidental to pregnancy.

When, however, miscarriage is induced by "puncturing the membranes" or other instrumental methods of the professional abortionist, there is great danger and double peril; for the process is liable to produce excessive hemorrhage, and liable also to be followed by severe inflammation. The deaths which are frequently mentioned in the newspapers, and the arrest of some physician or abortionist in connection with the "taking off," fearfully attest the prevalence and the danger of this proceeding.

Treatment of miscarriage.—The first consideration is perfect quiet. The following directions from the author's "Hydropathic Encyclopedia," perhaps cannot well be improved. "The patient should recline in an easy, recumbent posture, the wet bandage be applied around the abdomen, and changed several times a day, and two or three vaginal injections of cold water employed daily. When the flooding is excessive, and in case of internal hemorrhage, denoted by headache, great lassitude, shiverings, frequent and feeble pulse, and the patient becoming pale, exhausted, and faint, with a dark shade under the eyes, the tampon may be employed with advantage, or a silk handkerchief, wet in the coldest water, or inclosing a cylindrical piece of ice or snow, may be introduced into the vagina as far as convenient; it may remain for six or eight hours, and then be introduced again if necessary. Enemata of the coldest water are also valuable auxiliaries in severe cases. In all cases it is important to have the room well ventilated, and the patient placed on a cool and rather hard bed or mattress. The inexperienced attendant should not be unduly alarmed at the *faintness* which takes place after severe or protracted flooding, for it generally happens that this condition favors the formation of a clot or coagulum, which obstructs the bleeding vessels and effectually arrests the hemorrhage."

Although the patient should always be kept as cool as may be

without discomfort, it is always better to avoid chilliness, and especially to obviate cold extremities. If the surface becomes chilly the blood is determined preternaturally to the internal organs; and if the feet are cold the blood is pressed back, so to speak, upon the bleeding uterine vessels, and the hemorrhage aggravated. I have more than once arrested uterine hemorrhage by means of a cold wet cloth applied to the abdomen, and a jug of hot water applied to the feet.

CHAPTER VIII.

Presentations and Positions.

In the technical language of midwifery, *presentation* means the particular part of the fœtus which is found at the upper strait during labor; and the term, *position*, is applied to the situation or place of the presenting part.

Obstetrical authors make many needless distinctions of presentations and positions, which serve more to confuse the student than aid the practitioner. Madame La Chapelle's classification of presentations is the best I have seen, and sufficient for all practical purposes; and this makes only three divisions, viz., *head*, *pelvis*, and *trunk*.

These presentations, with their sub-divisions, may be tabulated, and all seen at a glance:—

Head.	Vertex.
	Face.
Pelvis.	Feet.
	Knees.
	Breech.
Trunk.	Shoulders.
	Breast.
	Abdomen.
	Back.
	Loins.
	Hip.
	Neck.

As delivery can usually be accomplished without assistance in all varieties of head and pelvic presentations, they are called *natural* by authors; and as all kinds of trunk presentations,

except in rare cases, require manual or instrumental aid, they are termed *unnatural.* The proper terms are *normal* and *abnormal.* But, as there can be but one normal presentation, and that the best possible one for easy and safe delivery, all others are properly termed abnormal. The *vertex* presentation is the only normal one, and if all women were in all respects, and at all times, normal, there would never be any other. Abnormal presentations, though more or less difficult and tedious, are not, in a majority of cases, dangerous. There are few cases of face, feet, knees, or breech presentations that require any special aid or management on the part of the practitioner, except patience. But trunk presentations are always dangerous. The fœtus lies across the abdomen, and cannot be delivered unless so changed that one or the other extremities are made to present; that is, it must, if possible, be converted into a head or pelvic presentation. This sometimes occurs by the "efforts of nature" alone, and the process is termed *spontaneous evolution;* and it can often be accomplished by judicious external manipulations.

Rationale of Presentations.—The reason that the head presents *normally* is because the head, being the heaviest part of the fœtus as it floats in the uterine cavity, *naturally* takes, in obedience to the law of gravitation, the lower part of the cavity; and the reason that the vertex is more frequently presented than the face is because that part of the head more readily "engages," or passes into the cavity of the pelvis. The vertex is the upper and back portion of the head which, in the fœtus is pointed, whereby it enters the pelvic cavity, and follows its curve on the principle of a wedge. It follows, therefore, that any other portion of the head, provided there was no lack of fluid for the fœtus to float in, could not so readily pass into and become fixed in the channel. This is why vertex presentations constitute about nineteen-twentieths of all the cases, the others being the consequences of unhygienic habits or abnormal conditions.

Frequency of Different Presentations.—It may be a consolation

to the woman, in view of approaching confinement, to know how rarely, even in the artificial ways and bad habits of society, the different kinds of abnormal presentations occur. Statistics gathered from hundreds of thousands of cases reported, present the following scale of chances :—

Vertex, nineteen cases in twenty.
Face, one case in two hundred and twenty-five.
Breech, one case in fifty.
Feet, one case in one hundred.
Knees, one case in two hundred.
Trunk, one case in two hundred and fifty.

Of course, if all women would adopt the Hygienic system, with all their inherited infirmities and acquired diseases, the ratio of abnormal presentations would be greatly diminished. I have never known any except the vertex presentation, in cases where women tried, however imperfectly, to live hygienically during pregnancy.

Diagnoses of Presentations.—There are few cases in which the presenting part may not be ascertained without difficulty. The marks or points of the fœtal body are so distinct and peculiar that, in most cases, a touch of the finger determines its position.

Vertex presentations are determined by the *fontanelles*, of which there are two, *posterior* and *anterior*. These fontanelles are depressions, or "soft places" in the skull, in consequence of the bones not having united. The posterior fontanelle is triangular, that is, the depression is bounded by the edges of bones resembling a triangle in shape. The anterior fontanelle is a crucial or quadrangular depression, that is, four angles or depressed lines can be traced from its centre at right angles. Between the fontanelles is a seam where the top lines of the fœtal head unite, termed *sagittal suture*, which can generally be traced some distance from the presenting fontanelle toward the other. Each fontanelle is not only distinguishable by its shape, but may be distinguished from any other part of the fœtal head or body by its *pulsation*. The motions of the brain,

as there felt through the integument, will correspond with the actions of the fœtal heart.

Either fontanelle is conclusive of a vertex presentation, but only the posterior is normal, as this brings the back part of the head forward in delivery, while the anterior indicates the opposite, and necessitates a more tedious labor.

Face presentations are recognized by the eyes, nose, and mouth.

When the *breech* presents, the buttocks, with the cleft between, and the genital organs, readily disclose it.

Feet presentations are known by the toes. The toes are distinguished from the fingers by being at right angles with the leg, whereas the fingers are continuous with the arm.

The *knees* are detected by a rounded tumor, with the projecting portions (condyles) of the thigh bone at the knee-joint.

Trunk presentations are known by the absence of all the signs of other presentations, and by the presence of the ribs, vertebræ, or shoulder blade.

Diagnoses of positions.—The presentation, of course, determines the position; or, reversely, the position of the fœtus causes a certain part to present; hence, when the presentation is known, the position is known also. The important practical point in all cases is, whether the position is such that, in the process of delivery, the posterior fontanelle will come in front under the arch of the pubis. But, to understand the position in all cases, we have only to consider the relation of the presenting part to other parts of the body. Thus, if the posterior fontanelle presents, the face will be backward; and if the anterior fontanelle presents, the face will be forward. In breech, knee, or feet presentations, there is no difficulty in determining the position, as the genital organs, knee-joint, and toes correspond with the anterior fontanelle, while the buttocks, concavity in the bend of the knee, and heel, correspond with the posterior fontanelle.

CHAPTER IX.

The Fœtus in Utero.

In order to have an intelligible idea of the duties of accoucheur, it is necessary to consider the condition of the fœtus and its surroundings in the cavity of the Uterus at full term. The annexæ, or appendages of the fœtus are,

The Membranes. { Decidua. Chorion. Amnion.

Annexæ. { Liquor Amnii. Placenta. Umbilical Cord.

The fœtus floats in the fluid termed liquor amnii, surrounded by the membranes which enclose both. The decidua is the outer or external membrane, the chorion the middle one, and the amnion the inner one. The three together constitute the shell or envelope of the fœtus. Before the completion of labor these membranes usually rupture and the liquor is discharged. In some instances the rupture takes place before the labor is so far advanced as to confine the patient to the bed, or even to the house; and in rare cases the membranes do not rupture at all, and the fœtus comes into the world completely enveloped in its intra-uterine covering. In these cases the child is said to be "*born with a veil*," and wonderful things are predicated of the future of children thus accidentally introduced. They may be prophets, seers, fortune tellers, mediums, or anything else as remarkable and unusual as their manner of birth.*

* The following article which appeared in a recent issue of the *Golden Age*, shows the superstitious notions which are still prevalent on this subject:—
Born with a Caul.—"Those who search the columns of the London

As the form and features of the new comer are easily distinguished through the semi-transparent membranes, the idea of a vail is natural enough. But the attendant will of course at once "rend the vail," unless the muscular exertions of its contents produce that result, and bring the little stranger in contact with the atmosphere which is needed to inflate its lungs and make it "a living soul."

The quantity of fluid contained in the amnion varies greatly

Times for curiosities will meet with advertisements such as the following: "A child's caul for sale;" "a child's caul to be disposed of; a well known preservative against drowning, etc.; price ten guineas." "To mariners, etc.: to be sold, a child's caul; price fifteen guineas." "To be sold, a child's caul; to save gentlemen trouble; price thirty pounds." "A child's caul to be sold for fifteen pounds." Persons who know nothing of this subject may wonder what a child's caul may be.

This name is given to a membrane which is sometimes found on the head of an infant at birth, nearly encompassing the head. It is a rare occurrence, and the rarity has led to great importance being attached to it. The child itself will be lucky; and the owner of the caul in after years will be shielded from many troubles that affect his neighbors. The superstition came from the East, where it had its origin in remote ages. Many diseases were believed to be curable by the wearing of a caul; and to this day some sailors —even English sailors in the second half of the nineteenth century—have a faith in the efficacy of a child's caul to preserve them from drowning at sea.

Sir John Offley, of Madeley Manor, in Staffordshire, bequeathed a caul as an heirloom, in a will proved in 1658: "I will and devise one jewel done all in gold, enamelled, wherein there is a caul that covered my face and shoulders when I first came into the world, the use thereof to my loving daughter, the Lady Elizabeth Jenny, so long as she shall live; and after her decease, the use likewise to her son, Offley Jenny, during his natural life; and after his decease to my own right heirs male forever; and so from heir to heir to be left so long as it shall please God of His goodness to continue any heir male of my name; desiring the same jewel to be not conceded or sold by any of them."

A child two years old fell into a well near Romford, and floated face uppermost on the face of the water, whence he was rescued by his mother. The good woman at once attributed the preservation of her boy to the fact that he had been born with a caul. The readers of Hood's "Whims and Oddities" will remember "The Sea Spell," in which, imitating the style of the old ballads, he narrates a sea story, but pokes his fun in every stanza at the superstition of the child's caul."

in different cases—from a few ounces to several pounds. In some cases the fluid which escapes after the rupture of the membranes, is so slight that the labor is termed "dry." But in other cases, several quarts may be suddenly discharged, and with such a gush as to alarm the patient and startle the young practitioner, unless both are prepared for such a contingency by understanding the possibility of its occurrence.

A very large accumulation of liquor amnii can usually be ascertained before delivery, by the remarkable distention of the abdominal walls.

Should the practitioner suspect sudden hemorrhage, he has only to inspect the clothing to see that the discharge is colorless.

The "*bag of waters*," in the language of the parturient chamber, means the projecting portion of the membranes and the amniotic fluid, against or through the os uteri, during the progress of labor. This "bag," projecting in front of the presenting part of the fœtus, constitutes a delicate and elastic wedge which greatly facilitates the dilation of the parts, and renders the delivery less tedious. Whenever the "waters" are prematurely expelled, the labor is more prolonged and painful.

The membranes, from various causes, may be so tough and unyielding as to require to be ruptured by artificial means, an operation of no difficulty nor danger, and only requiring a few scratches of the finger nail, or a slight incision with a knife.

The *Placenta* is termed the *afterbirth*, for the reason that it is, in all normal labors, not expelled from the uterus until *after* the child is born. The placenta is only found in the human being and mammiferous animals.

It consists of a flat, spongy mass, of a circular or oval shape, and is the medium of communication between mother and child, supplying nourishment to the child during its inter-uterine life by means of the mother's blood. It usually measures about six inches in diameter, and is from an inch to an inch and a half in thickness at its center, gradually thinning to its circumference.

The *Maternal* surface of the placenta is attached to the

uterus, and the *fœtal* surface is covered with the chorion and amnion. In some cases the placenta is attached near the os uteri, or even around it, constituting *placental presentation*, and endangering the life of the patient because of the excessive hemorrhage which is liable to occur, unless prompt and proper measures are resorted to. The placenta may also be so firmly adherent to the uterus, because of inflammation or prolonged pressure, as to necessitate its detachment by artificial means.

The *Umbilical cord* is the medium of communication between the fœtus and placenta, one extremity being in connection with the umbilicus of the child, and the other attached to the placenta. It is composed of two arteries and one vein. It is usually about the diameter of the little finger, and its ordinary length is from fifteen to twenty inches. In rare cases it has been found only four or five inches in length, or extending to several feet.

When very short, it is in danger of being ruptured before the child is born ; and when very long, it may be coiled around the child's neck, or knotted upon itself.

The arteries of the cord wind around it during its whole length, and in nine cases of every ten, according to the testimony of some authors, from left to right.

The pulsations of the cord, always prominent while the child is alive and the connection unbroken, are occasioned by the action of the fœtal heart, and are more forcible as the child is more vigorous. A rule in obstetrical practice is, never to cut or tie the cord until its pulsation ceases, as it always does after the lungs of the new-born child are fully expanded.

The Fœtal circulation.—There is no more wonderful process connected with living beings than the fœtal circulation and the changes it undergoes at the moment of birth ; and, although more theoretical than practical in a work of this kind, a brief explanation of it can hardly fail to give us exalted views of the Supreme Architect.

In the adult, and in the child after respiration is established,

the blood passes from the veins to the right side of the heart, thence to the lungs, returning to the left side of the heart, and thence through the arteries to all parts of the system. But, in the fœtus, the blood passes from the right to the left side of the heart, and thence to all parts of the system, without passing through the lungs. For this purpose there is in the fœtal heart, a communication or opening between the right and the left side, termed *foramen ovale.* As soon as the air expands the lungs this foramen is closed by a valve, and the current of blood passed on to the lungs, through which its course is continued to the end of life.

The least misadjustment of the delicate structures concerned in this process, or a moment's loss of time in their adaptation to to the new channel of circulation would result in instant death. Yet this accident is rarely if ever known to occur. In some few cases the valvular closure is not perfect, in consequence of which only a part of the general mass of blood passes through the lungs, resulting in imperfect aeration of the blood, and, in extreme cases, constituting the "blue disease"—*cyanosis.*

CHAPTER X.

Parturition.

The process of expelling the child from the uterus at full term is denominated *parturition*, or *labor*. No word could be more appropriate. It is work, effort. It is usually attended with pain, though not necessarily painful. It is a normal process, and, therefore, can only be painful in abnormal conditions. Almost every author of a work on midwifery has recorded cases of painless labor, and the current medical journals frequently mention them. Probably no physician of extensive practice has failed to meet with them. I have attended several such cases.

Rationale of Labor Pains.—The cause or rather the occasion of the pain, is contraction of the uterus, and, therefore, to the accoucheur, labor pains and uterine contractions are synonymous terms. But it is a great mistake to suppose that the degree or severity of the pains corresponds with the force of uterine contractions. The contractions may be extremely forcible and the pains very slight, or the contractions may be very feeble and the pains intense.

We see, in the various processes of manual labor, in the extraordinary feats of lifting, running, jumping, in gymnastic, and athletic performances, and in the violent efforts of "ground and lofty tumbling," that the muscles can be made to contract to the utmost without a particle of pain. And the uterus could never contract with force enough to cause pain, unless some disease or abnormal condition existed. If a person has a felon on the finger, or rheumatism in the hand, it would be extremely painful for him to lift the weight of a pound; but if the part was sound he could lift with all his power with no other feeling in the finger or hand except a momentary sense

of tightness or constriction, and he could repeat the process every few minutes without pain. Precisely so it is with the contractions (muscular efforts) of the uterus in delivery. If the parts concerned are in a state of inflammation, the agony may be terrible. If sound, the labor may be painless.

Pain, during labor, like diseases attending pregnancy, is attributable to morbid conditions. With most women there is more or less of sexual disease, usually chronic inflammation, rendering the parts sore, tender, and the necessary motions or stretchings correspondingly painful. Again, if the abdominal muscles are weak or torpid, as with many women of sedentary habits, they will not co-operate with the uterus in its expulsive efforts, in which case the contractions of the uterus will be irregular and spasmodic, greatly aggravating the pains. In some such cases the pains are excruciating.

When the abdominal muscles are strong and elastic, as they are in all persons who have what may properly be called good health, they support the uterus in all positions of the body, and aid its expulsive effort so as to give them proper direction and effect. But if they are lax and feeble they may not only fail to sustain and assist the uterine efforts, but will act irregularly and spasmodically, thus embarrassing the bearing-down or expulsive efforts of the uterus. This is one of the chief reasons why laboring women, who are on their feet most of the time, have easier labors and less frequent accidents and complications than those who are idle or sedentary.

Divisions of Labor Pains.—Labor pains are distinguished into the true and the false. The following table shows the distinctions with the symptoms pertaining to each :—

True.	Contractile.
	Recurrent.
	Bearing-down.
False.	Non-contractile.
	Irregular.
	Spasmodic.

In true labor pain the whole body of the uterus contracts, while the opening or mouth (*os uteri*) dilates. The effect is to diminish the whole cavity of the organ and force its contents toward, into, and finally through the *os uteri.* The dilation of the *os uteri* if aided also by the "bag of waters" being pressed into it, and after the "bag" has been ruptured and the fluid discharged by the presenting part of the fœtus, which acts like a wedge. As the vertex of the head is most perfectly adapted to answer the purposes of a wedge, fitting perfectly to the somewhat devious channel through which the fœtus passes in delivery, it is easy to understand why all other positions should be abnormal, and more or less difficult if not extremely painful.

This equal uniform contraction and pressure on the *os uteri* is the cause of the bearing-down sensation, which, when distinct and prominent, always determines the woman to be in labor. It may be recognized by the experienced accoucheur on merely looking the woman in the face during the uterine contraction, for, in spite of all her efforts to the contrary, she will clench her hands, shut her mouth firmly, and hold her breath, until the uterus relaxes. Real labor pains, moreover, occur at regular periods with intervals of perfect quiet. If an examination is made it will be found that, during each pain, or contraction, the presenting part is pressed firmly against or into the *os uteri*, and that, as soon as the pain, or contraction ceases, the presenting part recedes. We see, then, how perfect is the arrangement for labor to go through its different stages safely and painlessly when all the conditions are normal. The uterine contractions commence gently; the patient experiences a slight sense of pressure all through the abdomen tending downward; the contractions become more frequent, and the sense of pressure increases; in due time the sense of pressure becomes a decidedly bearing-down effort, which gradually increases in frequency and force to the end of labor. Thus the parts are distended by gentle efforts with intervals of rest, so that, if nothing exist or occur to disturb the harmony of the

process, there will be little or no pain, however great the muscular effort.

Signs of Labor.—The nature of the pains already described will determine the fact whether the woman is actually in labor. But there are preliminary symptoms indicating that labor may soon be expected which should be understood. Authors distinguish the preliminary or preparatory symptoms from the essential or expulsive symptoms. They may be grouped as follows :—

Preliminary.	Uneasiness in the pelvis. Obliteration of the neck of the uterus. Irregular abdominal and pelvic pains. Descent of the uterus. The *os uteri* accessible. Mucous discharge from the vagina. Tenesmus of the bladder or rectum.
Essential.	Bearing-down pains or efforts. Dilatation of the *os uteri.* "Show," or bloody discharge. Presence of Bag of Waters.

Preparation for Labor.—Probably there never was a mother who had the wherewithal who did not make ample provisions in the "little things" to dress and adorn the expected visitant. On this subject, therefore, nothing need be said. But to enable the patient to be in the best condition for parturition, a few words may be advisable. Above all things let her maintain a calm, cheerful, hopeful mind. If it be a first pregnancy let her remember that her chances are one hundred to one to get along without any serious difficulty, and a thousand to one to get through without dying provided there is difficulty. She may be further consoled with the reflection that all her attentions to hygienic rules during pregnancy, and even before, will render the chances of suffering and danger still less.

It is important that she exercise as much on the feet as she can conveniently, up to the very moment that labor commences ; nor should she then take to the bed or the chair, until obliged

to. Regard to this rule may be the difference between a normal presentation and easy labor, and an abnormal presentation with intolerable suffering. Many women are enjoined, by their medical advisers to "keep quiet" as labor approaches, and in rocking chairs at that. The practice is pernicious and may be disastrous. Sitting in a rocking chair and leaning forward, or in any manner pressing the chest upon the abdomen is liable to cause a malpresentation, and perhaps a trunk presentation, in which the fœtus lies transversely instead of perpendicularly with regard to the uterine cavity.

As soon as the pains, or contractions, become decidedly bearing-down, the bladder and bowels should be emptied. There is usually an inclination to defecate at this time; but if not, the bowels should be moved with an enema of tepid water. No food should be taken after labor has commenced, and but very little after the first preliminary symptoms, nor should the patient drink anything, not even pure water, more than actual thirst demands. Loading the stomach with either food or drink at this time, as is the manner of some, on the mistaken notion that they need extra nourishment for an extraordinary occasion, is a pernicious custom. The woman wants all the freedom from obstructions, and from other work, digestion not excepted, possible, throughout all the domain of organic life. No one would think of giving a race-horse, or a "walkist," or a gymnast, or a tumbler, or a pugilist, "extra-feed," when he was about commencing his unusual performance. In all these cases it is well understood that, to give the muscles all possible play and power, the stomach and bowels must be comparatively free. The same common sense should be exercised in the better business of having children.

Preceding Dietetic Habits.—Though not strictly in order, it may be quite proper in this place to refer to the important subject of dietetic habits during pregnancy, for it is during the hours of labor that a woman experiences the culmination of all the good or evil effects of her dietetic habits, whatever they may have been. She may live as simply and hygienically as

she pleases at all times, and be the better for it, but it is especially important, if she would have a "good time" through delivery and the lying-in period, and be exempt from the usual accidents and complications, such as prolonged suffering, hemorrhage, convulsions, inflammation, puerperal fevers, broken breast, &c., that her dietary, during the later period of pregnancy, should consist largely of good fruits, with a moderate allowance of fresh vegetables, and bread made of unbolted and unleavened meal. If animal food is used, it should only be fresh meat, taken moderately once a day. Every thing in the least constipating should be avoided. All high-seasoned dishes, pickles, salted meats, starchy preparations, sugar, fat, cheese, candies, ice-cream, &c., should be abstained from. These things not only render the uterine system and external organs of generation tender and inflammatory, but they increase the rigidity and hardness of the bones of the fœtal head, thereby causing a double obstruction to normal delivery.

Stages of Labor.—As Labor, under normal circumstances, is one continuous process, from the first contractile effort to the final expulsion of the fœtus, the distinctions of labor into periods or stages must, of course, be arbitrary; nevertheless, it is convenient to make these distinctions. They may be tabulated thus:—

Stages.
1. Dilatation of the os uteri.
2. Delivery of the child.
3. Expulsion of the afterbirth.

We have already considered the mechanism of the dilatation of the mouth of the womb. When enlarged to the size of a half dollar labor may be regarded as established beyond all peradventure. The chief work of labor is to accomplish the full dilatation of the *os uteri;* for when the head passes through it, the delivery is nearly completed, the expulsion of the body usually following with one or two contractions. The expulsion of the afterbirth may follow in a few minutes, or it may be retained indefinitely.

Examination Per Vaginam.

The explanations given in this work are not expected to supersede the necessity of employing physicians in unusual or abnormal cases, but to be sufficiently minute to enable a competent nurse, or any intelligent woman, to render all the assistance necessary in normal labors, when a physician cannot be had, or is not desirable. And it seems to me that every woman, married or single, ought to understand the subjects of normal pregnancy and childbirth in all their details, as much as they understand, or should, the processes of making clothing, preparing food, or training children after they are born.

In order to ascertain the stage or progress of the labor, and the presentation and position of the fœtus, the index finger of the right hand, previously oiled, is introduced into the vagina, and pushed upward and backward until it comes in contact with a tumor. This tumor is the uterus. The finger may or may not come in direct contact with the os uteri. If not, this is to be found by moving the point of the finger in various directions. In almost every case, when the finger first comes in contact with the round globe of the uterus, the *os uteri* will be found far back and high up in the pelvic cavity—as far as the finger can reach. Dr. Verdi, in his late work, "Maternity," in instructing the nurse how to make a vaginal examination, says: "If she is in doubt whether her finger is in the mouth of the womb, let her keep it within until a pain comes on, and, if the finger is within the womb, she will feel the mouth contract around it like the string of a purse."

I have always found it just the contrary. In uterine contractions the muscular fibres of the body of the uterus antagonize those of the *os uteri;* hence, when the pain is on the os uteri dilates instead of contracts. If the finger is within the mouth of the womb, it will recognize a *tumor within a tumor*. The presenting part of the fœtus will be felt surrounded by a ridge which is the edge of the mouth of the womb. When the pain is on the presenting part, or the bag

of water in front of it, will be pressed firmly against the edges of the os uteri, so that, between the os uteri and presenting part is only a very slight depression. But when the pain is off the uterus is relaxed, and the presenting portion is moveable, so that the finger can readily describe a circle between it and the os uteri ; and if the os uteri is sufficiently dilated, ascertain what part of the fœtus it is that presents.

CHAPTER XI.

Diseases during Pregnancy.

There are some accidents and disorders attending pregnancy and parturition which require prompt attention, but do not necessarily call for the services of the professional obstetrician nor the operative surgeon. These it will be convenient to consider in the present chapter.

Morning Sickness.—This is one of the earliest incidents of pregnancy, although it does not always occur. It is immediately occasioned by the disturbance of the adjacent organs, consequent on the enlargement of the uterus in the pelvic cavity. To relieve it the dietary should be dry and solid. The food should be eaten very slowly, thoroughly masticated, and taken without drink. Wheat meal bread, or crackers, with baked potatoes, and a good apple, would make a suitable meal.

Nausea and Vomiting.—As pregnancy advances these affections sometimes become very annoying and persistent. They are chiefly induced by constipated bowels, or a torpid liver, and bilious condition of the blood. Strange as it may seem, some authors of reputation regard vomiting as a normal and necessary incident of pregnancy, as though pregnancy were abnormal, and it is healthy to be sick! Dr. Bedford remarks (Principles and Practice of Obstetrics): "I hold that the nausea and vomiting of pregnancy, under ordinary circumstances, instead of being regarded as pathological, are, in truth, physiological phenomena." When the medical profession learns the true theory of disease, it will cease confounding pathological and physiological phenomena. It is no more physiological for a pregnant woman to be sick than for an non-pregnant one.

Dr. Bedford explains: "As soon as impregnation takes

place the uterus becomes suddenly congested, and this tendency of the blood towards the organ continues in unbroken currents until the completion of gestation. Without some derivative influence in the earlier periods of pregnancy, to hold in salutary check this determination of blood towards the uterus, its nervous structure would become so overwhelmed and irritated that premature action of the organ, and expulsion of its contents, would be the consequence. In order, however, to guard against such contingencies, nature has found it necessary, in the plan of her operations, to institute two phenomena—nausea and vomiting—the direct result of which is, for the time, to produce relaxation of the general muscular tissue, and increased activity of that essential emunctory—the perspiratory surface."

It seems to me that nature's plan of operations would be vastly simplified if it sent less blood to the uterus—just the quantity required for use. And that is just what nature does do, in all healthy women. The excessive quantity of blood, or congestion, is always the result of obstruction and disease. Dr. Bedford proposes to "aid and assist nature," in the cases in which she fails to institute the phenomena of nausea and vomiting by administering "minute doses of ipecacuanha to induce an irritable condition of the stomach."

The better management is to free the bowels with enemas of tepid water, and open the pores of the skin by means of tepid ablutions, followed by active friction. Sugar, grease, salted meats, &c., should also be excluded from the dietary.

Morbid cravings.—In some cases the pregnant woman has longings or cravings for the most improper and unwholesome articles, and it is a moot question among physicians and nurses whether they should or should not be gratified. Here, as everywhere, circumstances alter cases. There may be desires for certain articles of food or drink which are not strictly hygienic, where indulgence would be the lesser of two evils. But the rule, I am persuaded, is the contrary. There is a general prejudice among women, which is shared by some physicians, that the refusal of any article for which the pregnant woman

has a longing, endangers the "marking of the child." Admitting the possibility of this result, I think the greater danger is in damaging its organization by the indulgence. Due attention to the general health, a little mental effort in the direction of wholesome things, and that degree of self-denial which all persons should be capable of exerting, will overcome all morbid cravings, or render them harmless.

Mother marks.—Authors are not agreed whether strong mental impressions, or shocks, during pregnancy, can cause spots, blemishes, deformities, &c., in the offspring—*nevi materni.* Some cases seem to be well authenticated, and almost every mother has seen or heard of one or more individual cases which settle the question in her mind. However this may be, it is perfectly certain that all powerful emotions, caused by frightful, disgusting, strange or pitiful objects, affect the health of both mother and child injuriously. And the practical application of this fact is, that all such things should as much as possible be avoided. Pregnant women should not attend any theatre when tragedies like Virginius, Othello or Richard the Third are played, nor any spectacular performance where scenes of fear, suffering, or fright, are represented; and it is wrong to allow cripples, and diseased and deformed persons, to be on exhibition in the streets, for the reason, among many others, that their appearance and pitiful appeals may excite the imagination of the woman, when in the susceptible condition of the early months of pregnancy, especially in a first case, to that degree that she cannot avoid dwelling on the disagreeable subject or object for days or weeks. A true civilization would never allow beggars or cripples to ply their vocation in the public thoroughfares.

Toothache.—Those who are predisposed to this affection are liable to its recurrence on becoming pregnant. Freeing the bowels, and living abstemiously, for a day or two, will relieve it. It can often be removed at once by holding warm, tepid, cool, or cold water in the mouth. Experience will soon determine the temperature that is most agreeable.

Cramps.—Are among the frequent troubles of the earlier months of pregnancy. They are occasioned by pressure of the enlarging uterus before it rises out of the pelvic cavity. They affect the woman less at mid term, but are liable to be severe near the time of confinement, on account of the pressure of the uterus as it descends toward the pelvic cavity, where it may press painfully on the sacral nerves. To lessen the suffering as much as possible, and perhaps obviate it entirely, the woman should avoid sitting much of her time, especially in a rocker or in any leaning position. While liable to cramps she had better keep on her feet as much as possible without fatigue, and when tired lie down on a flat bed, or mattress, with the head only moderately raised, until rested. Of course the bowels should be kept free, and all causes of obstruction avoided.

Constipation.—As this is the most prevalent morbid condition of all women in civilized society, it is also an ailment of every pregnant women who "lives as others do"—reckless of hygienic habits. Those women who are habitually constipated will almost always have this condition very much aggravated in the early months of pregnancy. In severe cases intussusception of the bowels is liable to occur, producing the most violent retchings and vomitings for days or weeks. The remedial plan consists of enemas of tepid water, and a dietary in which wheat-meal bread and good fruits are the leading articles.

Piles.—Hemorrhoidal tumors are always the result of habitual constipation, and are very liable to re-appear or become aggravated, on the occurrence of pregnancy, if the woman has been previously affected with them. Not unfrequently they are first noticed some time during gestation; and sometimes they are exceedingly distressing as labor comes on. Moderately cool hip-baths, enemas of small quantities of cold water, and the application of cloths wet in cold water to the part are the remedies.

Pruritus.—A distressing irritation and itching of the genital organs occasionally torments the pregnant woman. Cloths wet

with tepid or warm water are the proper applications. In most cases warm water is more soothing than cold.

Heartburn.—This affection is caused by acidity of the stomach or acrid bile. Frequent sips of warm water will relieve it.

Sick-Headache.—Acrid or putrescent bile in the stomach occasions this difficulty. It is generally attended with much nausea, and little or no vomiting, and more or less pain and dizziness of the head. Sips of warm water constitute the treatment.

Salivation.—The pregnant woman sometimes drivels at the mouth, that is, excretes a sero-mucous fluid which is improperly termed salivation. It is not a discharge of saliva, but a mere excretion consequent on a morbid stomach. Let the diet be dry, solid, and simple.

Sleeplessness.—Preternatural wakefulness is among the occasional incidents of pregnancy. A hot-and-cold foot-bath at bed-time, and a cold wet cloth to the head will relieve. Let the woman avoid a late supper and all indigestible things.

Pains in the breast.—The mammary glands sometimes become painful, either from inflammation or neuralgia. Cold wet cloths will relieve in the inflammatory cases. When the pains are of a neuralgic or spasmodic character, warm fomentations are appropriate.

Pleuralgia.—Pain in the side, usually the right, sometimes becomes severe and persistent during the middle and latter periods of pregnancy. It is generally caused by congestion or enlargement of the liver. The wet-girdle and fomentations are the proper appliances.

Difficult Breathing.—Constipated bowels, general plethora, or a swelling of the liver in the later stage of pregnancy, will occasion more or less difficulty of respiration, which sometimes becomes asthmatic and attended with cough. Abstemious diet, moderate exercise, and due attention to the bowels, are the remedial measures.

Diarrhœa.—This affection is very uncommon with pregnant

women; nevertheless it may occur. A horizontal and quiet posture, cool enemas, and the warm, wet girdle are the remedies.

Misurination.—Inability to expel the urine is sometimes a very annoying difficulty. Warm and cold wet cloths applied to the lower part of the abdomen alternately, will usually relieve for the time being.

Varicose Veins.—The veins of the lower extremities sometimes swell and present a knotty appearance, occasioned by the pressure of the pregnant uterus on the blood-vessels. No special treatment is required; the bowels and skin must be kept free and the enlarged veins will disappear after parturition.

Hysteria.—This is among the maladies attending pregnancy, according to authors, but I have never seen a case. Any preternatural excitement may occasion it, and quiet is the remedy.

Colic.—Griping pains in the bowels may be relieved by warm fomentations, or sips of warm water.

Flatulence.—Whenever this is troublesome, draughts of warm water, toast water, apple tea, etc., will relieve.

Jaundice.—This appearance indicates a temporary interruption of the action of the liver. It will soon disappear if the bowels are kept free.

Liver Spots.—Brown, dingy stains, frequently disfigure the cheeks and forehead. They are more annoying than dangerous. Brunettes are said to be more subject to them than blondes. They are caused by retention of bilious particles in the skin. They require no special attention except the avoidance of grease, sugar, butter, cheese, and all other "bilious" foods and condiments.

Spitting of Blood.—Hæmoptysis is among the occasional derangements of early pregnancy. It is seldom of importance unless the patient is consumptive. An enlarged or suddenly congested liver sometimes causes a slight hemorrhage from the lungs. Perfect quiet, sips of cold water, and warm applications to the feet, are the remedies.

Palpitation.—Irregular action of the heart, amounting to painful throbbing or distressing palpitation, and frequently

attended with giddiness, partial blindness, hot head and cold feet, is one of the most frequent disturbances of the pregnant state. There are many causes, all referable to unhygienic habits, and consequent morbid conditions. Green tea, coffee, the excessive use of butter, sugar, etc., and constipation of the bowels, are the general predisposing causes. The "attacks" are always traceable to some unusual derangement of the digestive organs, as acidity, flatulence, congested liver, over eating, late supper, or indigestible aliments.

The remedy is preventive; avoid the above causes.

Disturbed Vision.—Partial or complete blindness may affect one or both eyes for a time. Sometimes black spots are imagined floating before the eyes as in amaurosis. The cause is in the digestive organs. Regulate the diet.

Disturbed Hearing.—Partial or complete deafness may affect one or both ears temporarily. Buzzing in the ears is regarded as threatening convulsions. But I attach little importance to the symptoms. The cause is in the stomach or bowels.

Paralysis.—Partial paralysis may affect the face, one side, or the lower extremities. The former cases are owing to indigestion, and the latter to constipation—circumstances which sufficiently indicate the remedial plan.

Convulsions.—These may occur at any period of pregnancy or during parturition. The remedial plan is simply removing all existing obstructions and avoiding all exciting causes. After the bowels have been moved by means of tepid enema, and fomentation applied to the abdomen for ten minutes, perfect rest is the remedy.

Hemorrhage.—Bleeding from the uterus, termed "flooding," during pregnancy, endangers miscarriage or abortion, and is usually attributable to a partial detachment of the placenta. Slight hemorrhages sometimes occur in consequence of mere congestion, and when these have happened periodically through the period of gestation, they have been mistaken for menstruation. Quiet, and cold wet cloths to the abdomen, are all the remedies necessary.

When the bleeding is profuse, vaginal injections of ice-water should be employed, followed by the *tampon*, or plugging the vagina. This means, introducing pieces of very fine sponge, a handkerchief, or better still, strips of cloth or a soft napkin, into the vagina, and pushing up as far as possible. By passing the *tampon* up firmly against the os uteri, a coagulum will soon form and obstruct the bleeding vessels. The tampon should be changed every ten or fifteen minutes, and the patient kept perfectly quiet, in the horizontal position, with the hips raised a little above the level of the body. Fainting, which is apt to occur if the bleeding is profuse, always arrests the discharge for the time, and often permanently.

Hemorrhage during labor requires precisely the same management as far as it is practicable. This is usually owing to *placental presentation*—the placenta being attached over or so near to the os uteri that the contractions of the uterus in labor detach it more or less. When the bleeding is alarming, the remedy is speedy delivery, which requires the manipulations of the professional accoucheur.

Hemorrhage, after delivery, requires a little different management, and is always due to insufficient contraction of the uterus. The *tampon* must not be used here, for the reason that it would only dam up the blood in the uterus without removing the cause. The coldest water, or ice, should be applied to the abdomen ; the hand should be dipped in cold water and pressed firmly upon the abdomen so as to compress the uterus and excite contractile efforts ; and these may be also favored by gently kneading the abdomen and making passes downward from the umbilicus. In extreme cases cold water has been introduced into the vagina, and even uterus, with good effect.

Dropsy.—Dropsical swellings of the lower extremities are common during the last two or three months of pregnancy. Sometimes the accumulation of fluid in the areolæ tissue is so great as to occasion difficulty in walking. It usually commences at the feet and extends upward. As the trouble is caused by the pressure of the uterus on the adjacent parts, it disappears

after childbirth. The circulation may be improved and the pain relieved by frictions and a horizontal position. The limbs should be raised on a chair or other support, and active friction made along the limbs from the feet upward, with the bare hand.

False Waters.—Occasional discharges during pregnancy of a watery fluid, unattended with uterine contractions, have received this appellation—technically, *hydrorrhœ.* These discharges may be tinged with blood, and mistaken for the "show" that indicates labor or abortion. The absence of the pains, or bearing down sensation is, however, sufficiently discriminating. All the treatment required is negative; avoid all very active exercises, straining, lifting, running, dancing, etc.

Leucorrhœa.—Those who are subject to a mucous or muco-purulent discharge from the vagina, known as "whites," will have an aggravation of the excretion during pregnancy. The disorder sometimes occurs in those women who have not been previously the subjects of it. In severe cases the discharge becomes almost wholly purulent, of a yellowish-green color, like the *sputa* from ulcerated lungs, and attended with much itching or smarting. In these extreme cases small vesicles may appear on the internal surface of the labiæ, which, opening, cause most distressing excoriation.

The affected parts should be bathed several times a day with water of the temperature that is most agreeable to the patient, whether warm, tepid, cool, or cold. Vaginal injections should also be employed once or twice a day, but for this purpose the temperature of the water should be moderately warm, lest the shock occasion uterine contractions.

Ulcerations.—Chronic ulcers of the womb, especially of the os uteri, are not uncommon, but do not materially affect the progress of gestation, nor of parturition, unless cancerous or malignant. Perfect cleanliness is all that need be cared for, until after childbirth, when the cure should be undertaken.

Chronic Inflammation.—Acute inflammation seldom or never affects the pregnant uterus, but a disguised and chronic form sometimes occurs. It is characterized by a constant pain,

tenderness, stitch, or sense of soreness; the uterus is sensitive to pressure, and the pain is increased by walking, and, after quickening, by the movements of the fœtus. The only serious difficulty to apprehend is, adhesion of the placenta. Cold or cool wet cloths to the abdomen, until the symptoms disappear, with careful attention to the bowels, are the specialties of the treatment required.

Irritable Uterus.—This term is applied to the *false pains* that sometimes occur in the later period of gestation, caused by pressure and spasmodic muscular action. The pains more or less simulate true labor pains, but can readily be distinguished by placing the hand on the abdomen, and noticing that, during the false pains, the uterus does not contract into a hard tumor, as it always does in the case of true labor pains. Mental and bodily quiet, with sufficient rest in the horizontal position, will relieve.

Vaginitis.—Chronic inflammation of the mucous membrane of the vagina is a very distressing though not dangerous complication. In extreme cases the inflamed part cannot bear the slightest touch without pain. Vaginal injections of tepid water, and hip-baths at 90°, once or twice a day, are the remedies.

Mania.—Various forms and degrees of mental aberration, amounting to temporary delirium or insanity, are not uncommon during pregnancy. The patient may say and do very absurd and ridiculous things, manifest aversion to the persons and objects of her dearest affections, and conceive antipathies towards husband, children, or friends. It is important that this matter be understood by all parties concerned. We can indicate no special remedy, but whatever disturbing influence of body and mind can be ascertained, must be removed, lest a transient derangement be mistaken for a depravity or a precursor of permanent mental hallucination, or dementation. Quiet, the removal of all disturbing persons or influences, warm foot-baths, and cold applications to the head, are the remedial measures.

Magnetic manipulations are applicable to these cases.

Those who are skilful in mesmeric manipulations can often restore those distressed patients to their mental balance at once, and sometimes unskilful operators succeed. The proper "passes" are made by passing the hands very gently over the patient's eyes in a downward direction. The passes are also applicable to *sleeplessness*, and to that indefinable state of restlessness and perturbation generally termed "nervousness."

CHAPTER XII.

Management of Labor.

Having determined the fact that the woman is really in labor, and ascertained the kind of presentation (unless delivery is near completion), the physician, if a man-midwife, should retire from the room for a short time in order to relieve the patient from embarrassment. When he resumes his position as attendant he should never fail, if the case be a first one—*primipara*,—to instruct her in relation to the breaking, rupture, or "bursting" of the "bag of waters," as the information may save her from an injurious shock. Or if he finds the labor far advanced, the "bag of waters" protruding and liable to rupture at any moment, he should not fail to explain what is about to occur.

The membranes are usually ruptured at the point corresponding to and in front of the presenting part of the child. In this case the waters are discharged at once, and the presenting part "engages" or comes in direct contact with the os uteri. But they may rupture elsewhere, and the waters be discharged more or less with each subsequent contraction of the uterus. Whenever the membranes protrude through the os uteri into the vagina so that the waters present a tumor, one half or more the normal size of the child's head, they should be ruptured at once, as this procedure will save the patient several unnecessary pains, and, perhaps, prevent the child coming into the world with a "vail" over its face, and body.

Attendants.—No one should be allowed in the room except "on business." The presence of all idlers and curiosity-seekers cannot be otherwise than mischievous. Besides the husband, nurse, and professional attendant, some lady friend is all the company desirable or that can be in any manner useful. No

conversation should be introduced or allowed concerning hard labor, accidents, or extraordinary occurrences of any kind. Indeed, the conversation should take almost any direction save that pertaining to the business in hand. Above all things avoid *whispering*, also any word or deed that seems in the least mysterious or secretive. Whatever is not proper to say frankly and openly should not be said at all.

In lingering labors, especially in first cases, husband, nurse, and all persons present, are very apt to become needlessly alarmed, or in some way disconcerted, and their disquietude is almost certain to be communicated to the patient, aggravating her pains, intensifying her fears, and still further prolonging her efforts. Perfect self-possession under all circumstances is like a "merry heart which doeth good like a medicine." It *is* a medicine, and "strictly Hygienic."

Dress.—As soon as the labor pains become decidedly *bearing-down*, and before the second stage of labor has fairly commenced, the dress of the patient should be so arranged as to prevent its being stained or soiled. The chemise is usually folded up around the waist, and the bandage to be fastened around the abdomen after delivery pinned around it. But as Hygienists do not employ the bandage, this part of the preparation may be omitted. Below the chemise a small folded sheet or a flannel skirt may be put to protect the clothing above.

Position during Labor.—Much speculation has been indulged in and many observations made respecting the normal position of the woman during the delivery of the child. When women have been left entirely to themselves some have taken one position and some another. Some have chosen the bed, others a squatting position, others resting on the hands and knees on the floor, while some have changed from one of these positions to the others frequently, and been delivered finally in either one as it happened.

There is little to chose between the chair or stool and the bed, except that the latter position is more convenient for the patients after-delivery, and more agreeable to the attendants

and practitioner. The bed is now preferred by physicians generally, as being quite as well for the patient, all things considered, and altogether most convenient for all others concerned.

Some accoucheurs have a preference for the left side, directing the patient to lie on her left side near the edge of the bed. I am not aware of any advantage of this position over that on the right side, so far as the patient is concerned; but as most physicians are more accustomed to employ the right hand than the left in obstetrical manipulations, it may be a great accommodation to them—provided there should be any thing for them to do save "watch and wait."

Regulating the Pains.—During almost any stage of labor the uterine contractions may become feeble, irregular, or be altogether suspended. Exciting news, any mental shock, or the arrival of a strange physician may cause their suspension for a time, in some cases followed by vomiting, cramps, or sharp pains in the muscles of the back, abdomen, or lower extremities.

If the patient is able to walk around the room a few minutes, the pains, if suspended, will generally return, and if irregular, will soon become regular. In most cases gentle frictions over the abdomen will succeed. Compressing the uterus gently through the abdominal walls will also aid in restoring normal uterine contractions.

It is customary in these cases to administer ergot, myrrh, or other "forcing" medicines; but they endanger the life of the child and render the mother liable to hemorrhage, hour-glass contraction, and other distressing sequelæ.

Birth of the child.—During the first stage of labor, as we have seen, the *os uteri* becomes sufficiently dilated for the child's head (or other presenting part) to press down strongly on the soft parts of the mother—the vagina and perineum. The patient will now feel a strong inclination to co-operate with the expulsive efforts of the uterus, that is, make bearing-down efforts. She should be encouraged to do this, as a little mental

effort on her part may co-ordinate and harmonize the action of the respiratory, abdominal and uterine muscles, rendering the progress greater and the suffering much less. She should be instructed to take a full inspiration, then when the lungs are fully inflated, hold the breath as long as convenient, and *bear down* steadily as long as possible. If she will shut her mouth firmly and restrain from all exclamations during the pains, continuing the downward effort with all her strength, she will gain time and lessen the distress.

During these vigorous bearing-down efforts she is apt to complain of severe pain in the small of the back. This may be greatly alleviated by pressing against it moderately with the hand.

It happens frequently, especially in first cases, as the delivery approaches its termination, and while the pains in the back are considerable, that the patient becomes excited, perhaps hysterical, talks incoherently, and seems distracted with vague apprehensions. She should be quieted with the assurance that her troubles will soon be ended, urged to keep her position on the bed as steadily as possible, and continue her bearing-down exertions.

At this time a pillow should be folded and placed between her knees, and her feet allowed to press against the foot-board, or something equivalent. Also fasten a folded sheet, towels, or something similar, to the bed post, and let her pull against it while bearing-down, as firmly as she inclines to.

Supporting the Perineum.—As the head is being delivered, obstetrical authors regard it as very important to "support the perineum." The object of this is to prevent rupture or laceration of the soft parts at the moment when the largest diameter of the child's head passes. And supporting the perineum means pressing steadily against it. I regard this proceeding as worse than useless. It is utterly impossible, on account of the exertions, and often severe struggles of the patient, to make steady pressure, and if it could be done the result would only endanger the very accident it is intended to prevent.

I have never practiced this method of "support," and have always advised my students against it; and I have never known a rupture to occur in my practice or theirs.

It seems to me a self-evident fact in mechanics that pressure on both sides of the soft parts would be more apt to injure them than pressure on only one side. As the child's head emerges from the soft parts, they are stretched almost as thin as parchment; but being musculo-membranous in structure and exceedingly elastic, lacerations are very rare. If, however, severe pressure is made on one side by the passage of the child's head, and on the other by the hand of the attendant, the chances of rupture are just doubled. If pressure is made at all it should be against the child's head to render its progress slower, and give more time for the soft parts to dilate; but even this can amount to but little.

Subsidence of the Pains.—It sometimes happens that the uterine efforts become very weak or entirely subside when the delivery is almost completed. This is never an alarming occurrence in normal labor. It means that the muscles concerned in expulsion have become fatigued and need rest. Let them rest. If there are no complications they will resume work in due time. Some obstetricians recommend hot tea, brandy, volatile alkali, &c., to reproduce the pains; but rest is the better remedy; besides, stimulants endanger hemorrhage when there is a predisposition to it. If the practitioner cannot well wait till nature is recuperated by rest, he may hasten the resumption of expulsive efforts, in the safest manner possible, by abdominal manipulations with the bare hand. He may gently compress the uterus through the abdominal walls: move the hand, making moderate pressure, from the umbilicus downward, patting the abdominal muscles very gently from above downward, &c.

Duration of the Second Stage.—The second stage of labor is exceedingly variable in duration. The child may be expelled by a single prolonged pain, or by ten or twenty. The average is perhaps a dozen or thereabouts. But if the presentation is

normal, no woman need fear a successful issue, however severe or prolonged the pains may be.

There are cases in which, because of a large head, or a rigid and narrow outlet, or both, an hour, or several hours of vigorous uterine contractions are required to mould and shape the head so that it can pass. It is wonderful to notice the extent to which the head can be pressed *out of shape* without injury, because of the elastic bones and sutures of the skull. I have known cases in which the head was so elongated and the features so distorted as to suggest the idea of monstrosity or deformity, yet in a few hours thereafter the baby was as good-looking as the fond mother supposed any baby possibly could be.

Receiving the Child.—As the head of the child is expelled, it should be supported in the palm of one hand—the right hand when the patient is on the left side, but be very careful not to do any thing else. Avoid all pulling or traction. See that the cord is not coiled around the neck of the child, so as to endanger suffocation, or is not drawn so tight as to endanger a rupture at the navel. In the former case it can be uncoiled in a moment unless too short, when it must be loosed a little by pulling it down, and the labor hastened by abdominal manipulations. This is also the method of proceeding when the cord strains upon the navel.

If the child is retained in this position more than half a minute, examine and see if its face is blue and bloated. If this is the fact, the circulation of the cord is interrupted by pressure, and the delivery must be hastened by means of abdominal manipulations, and by making gentle traction with the index finger placed under the armpit of the child.

The first thing to ascertain after the child is born, is whether it breathes. If the lungs readily and fully expand, a lusty *squall* that always delights the hearts of mothers and midwives, will proclaim the advent of the little stranger into this breathing world. If this notice of appearance does not occur, see that the mouth is not obstructed with mucus, nor impinged

against the bedding; always turn the face of the child *from* the mother, so that its respiration will not be affected by the discharges.

Cutting the Cord.—The cord should be cut as soon as its pulsation has ceased. This usually happens in a minute or two after birth, sometimes in a few seconds. Tie a string around it about an inch and a half from the navel, and place another ligature as far from that, cutting between them with scissors. The end of the cord attached to the child is then to be wrapped in a soft rag, a soft napkin placed around it, and the child put in soft blankets, and placed in a safe position—never in the rocking chair.

The After-birth.—After the birth of the child, the patient remains free from pain for a time, varying from a few minutes to several hours. The usual time is ten to thirty minutes, when the uterine contractions, with more or less pain, are resumed, and the after-birth expelled. It frequently happens that the after-birth is expelled into the vagina with the contraction of the uterus that completes the delivery of the child. This fact may easily be ascertained, and always should be. Grasp the lower part of the abdomen firmly with the hand, and if you feel a firm hard ball or globular tumor, you may be assured that the uterus is firmly contracted, and empty,—that the after-birth is expelled. If the abdomen is but slightly collapsed, and no round tumor distinguishable through its walls, the after-birth is still within its cavity, unless there is a twin-baby, which fact will soon be disclosed by a renewal of the bearing-down efforts of the uterus.

When the abdomen is sunken, denoting a partial contraction of the uterus, but not to the extent of expelling the after-birth, wait until the uterus begins to contract, which will be indicated by slight pains, or more or less distinct bearing-down efforts, or both. If these efforts are feeble, they may be assisted by gently pulling on the cord, and manipulating the abdomen from above downward, or still more efficiently by dipping the hand in cold water, and gently compressing the abdomen with the

open hand and fingers. One, two, or three uterine contractions are usually sufficient.

When the after-birth is expelled from the uterus, it may remain indefinitely in the vaginal canal without exciting any noticeable pains or contractile efforts of any kind. I have known young practitioners wait impatiently for hours for the uterus to do something, when there was nothing for it to do. The placenta and membranes were all in the vaginal passage, and only required to be taken away. This may always be properly and safely done, when the uterus is fully contracted, as already explained.

But even this very simple operation may be performed very awkwardly, or not at all, by a very little mismanagement. In making traction on the cord, some persons forget, and others do not know, that the force should always be made in the line of the pelvic channel. If the cord is pulled too much forward against the pubic bones, it may break without moving the after-birth in the least, and I have known this very annoying accident to happen in this way more than once. The cord should always be pulled downward and backward as much as possible. The better management is to pass two fingers along the cord to the after-birth, letting the cord guide the fingers by resting in the depression between them; then press downward and a little backward while pulling the cord directly forward. The fingers serve as a sort of pulley to move the after-birth along the centre of the passage. I have several times removed the after-birth in this manner, in less than one minute, after hours had been expended in misdirected efforts. As a last resort, when necessary, the hand can be introduced, the fingers formed into a conical shape, into the vagina, until they come in contact with the placenta, which will feel like a spongy mass. The fingers and thumb can then readily grasp, or link into, some portion of the mass, and easily remove it. This is always the way to manage when the cord is broken.

Obstetricians usually envelop the cord in a linen cloth, and twist it two or three times around two or three fingers of one

hand, while the other is introduced, in cases where the placenta is retained, and the cord unbroken. But if a knot is tied in the cord, one or two twists around the index finger, without any linen, will answer all purposes.

It should be recollected that the after-birth includes the placenta and membranes. For this reason, when the after-birth passes through the vagina, it should be twisted around two or three times—rotated on itself—so as to wind the membranes into a cord, and prevent the contraction of the os uteri from retaining any fragments.

Coagula.—In cases attended with considerable hemorrhage, it sometimes happens that coagulated blood will lodge in the os uteri, and occasion distressing bearing-down pains. Convulsions have been attributed to this cause. Should any untoward symptom indicate this condition, the fact can be easily ascertained, and the coagula may be readily removed with the finger.

Chloroform.

The propriety of using chloroform during labor, and the cases to which it is adapted, ought to be understood by professional nurses as well as regular physicians; hence a few words on the subject may be a fitting conclusion to this chapter. There is much discrepancy in the medical profession respecting the cases in which it may be properly employed, some prescribing it as a general rule, and others in rarely exceptional cases. It is certain that the effect of chloroform is injurious to both mother and child. It must, therefore, always be regarded as a choice of evils, and its use limited to preternatural labors and extraordinary complications. In malpresentations which require version, or turning, and in all operations during labor which require the tedious, painful, or prolonged use of instruments, and in the terrible agonies that sometimes result from extreme rigidity or inflammatory conditions, chloroform is not only justifiable, but proper.

There is no danger to be apprehended if it is skilfully man-

aged. It should always be inhaled very slowly, well mixed with atmospheric air, and the room thoroughly ventilated. It is not always necessary to procure mental unconsciousness in order to alleviate pain. A partial anæsthesia is usually sufficient, except in the cases of severe operations.

A mixture of equal parts of ether and chloroform is preferable to pure chloroform, and probably the very best, mildest, and most manageable preparation for anæsthetic purposes, is a mixture of one part alcohol, two of sulphuric ether, and three of chloroform.

CHAPTER XIII.

Attentions to the Child.

As we have already explained, when the child is sufficiently noisy, we have no further trouble on its account except to dress it and feed it.

But viable children are sometimes born in an unbreathing condition. They appear as still-births, yet may be saved. For some reason the respiratory muscles remain dormant. Many causes may induce this condition, as prolonged pressure on the cord, extreme compression of the brain, &c. It has been caused by ergot, belladonna, and other narcotics administered to the mother, or applied to the os uteri. Chloroform has occasioned it.

If the child does not breath, clear the mouth of mucus, if obstructed with it, by wiping it out with a soft handkerchief wrapped around a finger; next sprinkle the face, chest, and back with cold water; and if the child does not show signs of vitality, alternate the sprinkling with warm and cold water; patting the child rather smartly, with the hand dipped in cold water, on the back and abdomen, will sometimes instantly produce the respiratory efforts. All of these efforts may be aided by pressing on the abdomen with the flat hand for two or three seconds, then removing the hand suddenly, and thus alternating, so as to imitate in some degree the motions of the abdominal muscles, and diaphragm in the act of respiration.

A stream of cold water falling from a height of several feet on the chest or back has succeeded in some instances, as has also a current of electricity passed to the chest from the nape of the neck. Powerful shocks should always be avoided.

During these or any other attempts to excite respiration, the head should not be allowed to fall forward on the chest, the

body of the child should be kept straight on a level surface, and the head should always be lower than the body.

Half an hour is not too long to persevere in these manipulations if respiration is not sooner produced. Cases are well authenticated in which much more prolonged efforts have been successful.

Dressing the Child.—Neither soap nor grease should be applied to the delicate skin of a new-born child. A fine sponge or soft flannel cloth and moderately warm water are all that are useful or necessary to remove the viscid matter that adheres with more or less tenacity to the surface. Mothers and nurses are apt to overdo the washing and rubbing business, from sheer fastidiousness, or a desire to have the whole surface of the little thing shine like polished marble. They may be assured that that adhesive matter they are so anxious to scrape off, if need be, is one of the most harmless things imaginable, and all that is not removable quickly by gentle means may safely be left to the "efforts of nature." They should recollect, too, that the skin of the child, on its access to atmospheric air, is extremely sensitive, and if it do not cry nor complain, it is no less liable to injury. The washing operation should always be performed quickly, and the skin wiped dry with a warm soft cloth to prevent chilliness. Some persons apply not only soap to the skin of the baby on the occasion of its first ablution, but even add diluted alcohol, or some form of ardent spirits. This is more than barbarous.

To prevent the umbilical cord from chafing the skin, as well as to keep it in place, it may be drawn through a hole made in the centre of an old linen rag a few inches square, which should be oiled or smeared with mutton suet, or simple cerate, and folded around it, covering the whole with a fine flannel cloth around the abdomen. The folded cord should always be turned *upward* on the abdomen.

The "belly-band" so generally employed by all other practitioners is dispensed with by all Hygienic physicians. It is worse than useless. The young child does not need to have

its little abdomen "supported" or cramped by a bandage pinned tightly around it, more than does the young lamb or the new-born kitten. Nature has made the best arrangements, and all interference is simply pernicious. The child wants all possible freedom of motion, while the "belly-band" not only prevents free breathing, but injures the abdominal and thoracic viscera by compression.

In the matter of the child's clothing, the essential points are, to have the diaper thin, fine, and soft, and to have all the garments loose, and equibly distributed over the body and limbs. Low neck dresses, with short sleeves, and an excess of clothing on the chest, and especially the abdomen, are the common errors in the dresses of children and babies, and the common causes of their frequent coughs, colds, croups, and premature deaths.

Feeding the Baby.—In a few hours after the birth of the child, and as soon as the mother is well rested and the child properly dressed, the child should be allowed to take its first meal, which should always be breast-milk, and nothing else, when this can be had. No harm will result if the food is not quite ready when the little stranger is invited to the feast. Its efforts to partake will accelerate the production.

One of the abominable customs of physicians and nurses who profess to be civilized is, to feed the infant with sweetened urine, or some worse laxative medicine, to purge away the *meconium*, as the dark slimy matter which first passes from the bowels is termed. Something or somebody has taught them that this *meconium* is a dreadful matter to have in the bowels, and should be physicked out with all possible dispatch. Its presence in the bowels for a week would be much less injurious than a single dose of the medicine usually administered to remove it; moreover, the mother's first flow of milk is exactly the "medicine" required.

Three or four times a day is enough to nurse the infant, and not at all during the night. Feeding the infant once or twice, or whenever it cries or gets uneasy during the night, is a most

pernicious practice, and leads to the habit eventually of eating as the remedy for all bad feelings. Begin with the baby right, and it will soon learn to sleep at night and eat during the day.

When the mother's milk is deficient or absent, cow's milk is the best substitute. It may or may not be diluted with a little pure water, according to its richness. If the cow, in the winter season, is fed almost wholly on hay, and not slopped with anything, the milk should be diluted with one part pure water to two or three of milk. In the summer time, when fresh grass is the principal food, no dilution is required.

It is another common and pernicious custom to sweeten cow's milk, when fed to babies, with loaf sugar. This induces constipation invariably, and all its train of colics, gripings, flatulence, humors, &c.

Great care should be taken to have the infant, when obliged to feed from a bottle, to take its food slowly, and drop by drop, as it does from the mother's breast. Fast eating is as bad for infants as for adults.

CHAPTER XIV.

Attentions to the Mother.

Although some mothers are able to wait on themselves immediately after delivery, and even wash, dress and take full charge of the child, the majority are quite otherwise. The safe rule, therefore, is for the woman to see how little she can do rather than how much. There would be little danger of any serious consequences if she should exert herself all she had ability to, provided she was in perfect health, full vigor, and of normal habits in all respects. But this is the case with few, and, unfortunately, what is termed "high civilization" is almost everywhere associated with unhygienic habits and consequent liability to disease. Any considerable exertion, before she is well rested, may endanger hemorrhage, or occasion uterine displacement. Hence the safe rule is not to allow the woman to help herself at all at first.

The soiled garments and clothing should be removed without any exertion on her part, and a soft napkin applied to the vulva. She should not be exposed to a draught of cold air, and if inclined to chilliness she should be kept very quiet and well covered with blankets until the external circulation is fully restored.

The "bandage" which is generally pinned around the abdomen had better be omitted. The same objections in kind apply to the "abdominal bandage" of the mother, as to the "belly-band" of the child, though not in degree. Both however, are worse than useless. The object of the bandage is to bring the abdomen into proper shape again; but this, nature has fully provided for in the contractile structure of the uterus, and abdominal walls and muscles. If this bandage is

applied very tightly, it must tend to produce prolapsus; if not, it can be of no possible service.

After the woman has rested for a few hours there is little danger of flooding, displacement, excessive after-pains, or rush of blood to the head, or any other accident, by any reasonable exertion thereafter. I have known cases in which fainting and severe determination to the brain resulted from the rashly heroic attempt of the woman to take a hip-bath a few minutes after delivery. A few might do this safely, but the experiment is as needless as rash; wet cloths and vaginal injections are a perfect substitute for a hip-bath in all cases where this is supposed to be indicated.

Company.—The friends and relatives of the mother should not be allowed to intrude upon her, not even to tender congratulations, until she has had sufficient rest. The additional excitement which their presence would occasion might be the cause of flooding, when there is a predisposition to it, or of a feverishness which would interfere with the due secretion of milk.

Regimen.—Wine, cordials, broths, hot teas, and slop dishes of every kind are objectionable immediately after delivery. Nothing should be taken into the stomach until the woman is well rested, except pure water according to the thirst. If she is inclined to chilliness, a little warm water may be taken. Whenever she feels in good condition and appetite returns, she may partake of a simple meal, and it can hardly be too simple. Mothers ought to understand that the quality of the first milk they furnish for the subsistence of the offspring is better or worse as their dietetic habits are proper or otherwise. The alcoholic stimulants that are so generally prescribed have a most deleterious effect on the child, as do all high-seasoned and complicated dishes. The child may be rendered sickly, or its life destroyed, by such a dietary on the part of the mother as will not seriously disturb her.

Passional influences.—It is just as important that the mind of the mother should be maintained in a composed and agreeable

condition, in order to have the milk of proper quality, as it is to have the food and drink wholesome. Anger, grief, or any violent passion or depressing emotion, will instantly affect the quality of the milk injuriously. Soon after delivery the whole organization of the mother, bodily and mental, is in a peculiarly impressible condition, and influences which at other times would seem to do no serious damage, might produce disastrous consequences to either mother or child.

All obstetricians of much experience know how readily the mother's milk is rendered unwholesome and even poisonous to the nursing infant because of some violent mental commotion on the part of the mother. To understand the principle involved we need only refer to convulsions, diarrhœa, paralysis, &c., which are not unfrequently caused in adults by mental shock, fear, despondency, &c.

I have no doubt that thousands of drunkards and debauchees owe their early propensity to dissipation to the "few drops of brandy" which were administered to the child the first days of its existence, or to the mother during the nursing period.

It is a melancholy fact that nearly all the "soothing syrups" and other medicaments for children that fill the newspapers and deluge the land, are the vilest compounds of alcohol, opium, and other stimulants and narcotics.

CHAPTER XV.

Disorders incident to labor.

Rigidity.—In some cases, especially in the first labors of strong young women, the abdominal walls may be so firm and unyielding as to cause injurious pressure on the abdominal viscera. The wet-girdle worn a part of each day, and the hip-bath for ten minutes at 90° once or twice a day, will remedy this difficulty.

During labor, the vagina, os uteri, or external parts, may be so rigid as greatly to retard progress and aggravate the sufferings of the patient. In such cases, warm water should be applied. If the labor is not too far advanced, a more effectual remedy may be found in steam or vapor, over which the patient may sit. For this purpose hot water can be poured occasionally into a pail or small tub ; or the vapor can be readily extemporized by putting a hot brick or stone into the water.

The narcotic washes and ointments that are so generally employed in these cases, are much less efficient agents in inducing relaxation than is the vapor of water, besides being positively injurious to the child, and possibly causing hemorrhage by occasioning atony or paralysis of the uterine fibres.

Retained Placenta.—This may be caused by abnormal adhesion to the uterus—the consequence of pressure or inflammation—by atony of the uterus, hour-glass contraction, or by morbid enlargement of the placenta itself. Some authors add to the causes, spasm of the os uteri.

When the placenta is partially detached from its connection with the uterus, there is usually considerable hemorrhage ; and the management should be prompt and decided in proportion to the loss of blood. In the absence of flooding the case may

be safely left to nature, with such measures to induce uterine contraction as have already been mentioned.

Obstetricians have discussed the question, how long should we wait, when there are no complications demanding prompt delivery, before suspecting morbid adhesions, and attempting the extraction of the after-birth? Although opinions differ on this as on almost all medical subjects, the majority limit the time to two hours.

The measures already recommended to excite uterine contraction are applicable here, but may require to be employed with more vigor and persistency. If they do not succeed, or if hemorrhage, convulsions, or any other alarming complication attends, the hand should be at once introduced, in a conical form, into the uterus, and the placenta detached by gradually tearing it away with the fingers, the uterus, meanwhile, being steadied by the other hand pressing firmly on the lower part of the abdomen.

When retention is caused by *atony*, or weakness of the uterine muscles, the manipulations already mentioned will be sufficient. The electrical current is also useful, if skilfully applied.

Hour-glass contraction is a spasmodic contraction of the upper portion of the neck, or in the body of the uterus, constricting its middle portion, and dividing the organ into two compartments resembling an hour-glass in shape, and retaining the after-birth in the upper compartment. The agony resulting from this condition is often extreme. Two measures may be employed to overcome the spasm: warm fomentations to relax the muscular fibres of the strictured part, and manipulations to restore the action of the longitudinal fibres of the body of the organ. These measures should be employed in rapid alternation. Flannel cloths dipped in water as hot as can be borne, wrung so as not to drip, should be applied to the abdomen for one or two minutes, and then the hand, dipped in cold water, should rub and knead the abdomen one minute. It will assist to introduce a piece of prepared sponge, enveloped in soft

linen, or some other convenient substance, into the cavity of the uterus, to act as a wedge (its apex being against the stricture), but this is rarely necessary.

Morbid enlargement, or excessive size of the after-birth, is not a common complication, nor is it difficult to manage when it does exist. Whenever, after delivery, the uterus contracts vigorously without the after-birth coming away, morbid adhesive enlargement, or some other impediment may be suspected. The after-birth may be retained in consequence of being doubled upon itself, as well as because of excessive size. The after-birth in either of these cases can be readily detected by the touch through the os uteri, and the remedy in both cases, is to introduce the hand, and bring it away. The rule for proceeding is invariably to introduce the hand in the absence of uterine contraction, and bring the mass away while the uterus is contracting. Otherwise flooding, or inversion of the organ, would be endangered.

In some cases the after-birth is retained by an accumulation of coagula, and in others, by the liquor amnii pressing down against it, so as to form a kind of sac over the os uteri. When coagula exist, they should be removed at once. When the sac is present it should be ruptured, which will end the difficulty.

Spasm of the os uteri sometimes occurs soon after delivery of the child, so as to render the introduction of the finger difficult, and prevent the expulsion of the after-birth. In these cases, the woman may suffer intensely from the fruitless efforts of the uterus to expel its contents. Warm water is the remedy. Warm wet cloths (soft linen) may be applied to the os uteri, and fomentations to the abdomen. Vaginal injections of warm water are still more efficient, when it is convenient to apply them. Some authors recommend inserting one finger into the os uteri, and allowing it to remain some time. This may be followed by a second, and, finally, a third finger, if need be.

Inversion.—When the uterus is turned inside out, it is said to be inverted. This usually occurs, if at all, immediately after the

delivery of the after-birth, or with it. Fortunately, this accident is very rare.

The common causes of inversion are: attachment of the placenta to the upper part of the uterus, too forcible pulling of the cord, or violent exertion on the part of the patient. In a few cases recorded, the inversion seems to have been attributable to congestion and weakness of the uterus.

When the uterus is completely inverted, nearly the whole organ is external to the vagina, presenting a tumor whose base is below, and apex above. The os uteri, of course, cannot be recognized. It may be distinguished from a polypus tumor by this having its base above, and its pellicle or apex below. Inversion is generally attended with much flooding.

In all cases the organ should be replaced with all possible expedition; yet this is one of the cases in which the attendant should never lose time by being in a hurry. If the placenta be still attached, and can be peeled off readily without much force, this should be done; if not, both uterus and placenta should be returned into the pelvic cavity, and the placenta thereafter removed as in ordinary cases of adhesion.

The manner of procedure is as follows, and no intelligent nurse need fail in the operation if obliged to undertake it: Grasp the tumor by the hand and press it steadily and firmly, pushing its most prominent lower portion *into itself*, so as to *re-invert* it. If the uterus contracts, which will be known by its becoming suddenly hard and tense, cease all efforts at reposition until it relaxes; then renew the pressure, pushing the hand, formed into a conical shape, into the depression, and so on until the organ is restored to its normal position.

Hemorrhage.—In addition to what has been said in a preceding chapter on this subject, it may be remarked in this place, that hemorrhage after delivery is among the most alarming occurrences for which the practitioner should always be provided. In normal labors very little blood is lost,—probably none. Indeed, I am of the opinion that all hemorrhage, during either menstruation or parturition, is abnormal. I can

understand why blood should flow when a tooth is pulled, a tumor excised, a limb amputated, or a blood vessel ruptured. But none of these cases are analogous to menstruation and parturition, which are normal processes. And the facts that undomesticated animals lose no blood in the performance of these functions, and that some women do not, is conclusive with me that all uterine hemorrhage is pathological, and the consequence of disease and debility.

It is important to distinguish between *external* and *internal* hemorrhage. In the former case the blood passes from the uterus into and through the vagina. In the latter case it is retained in the cavity of the uterus. The former is readily known by the sanguineous discharge. The latter is manifested by the fulness of the abdomen, the pallor of the face, and, in extreme cases, the ghastly cheek, and the speechless and unconscious condition of the patient.

There is a single indication of cure in all cases—*induce uterine contraction.* Here, I repeat, the *tampon* must never be used; it is always dangerous, and may, by converting an external into an internal bleeding, prove fatal. Abdominal manipulations, the application of cold water, which may be dashed with some force or poured from a height on the abdomen, and the introduction of ice into the vagina, are the main remedies to rely upon. When the placenta is still attached, and the hemorrhage is not immediately arrested, the hand should be introduced into the uterus and the placenta removed. The patient may also take frequent sips of ice water. In extreme cases, the injection of cold water into the cavity of the uterus has excited uterine contractions and arrested the hemorrhage at once.

Should the extremities become cold, they must be promptly warmed with bottles of hot water, or warm flannels, and the patient should be kept perfectly quiet; any sudden exertion, as sitting up, might be instantly fatal.

Brain Fever.—When blood is rapidly lost in flooding, the patient will frequently *faint*, and the hemorrhage be moment-

arily arrested; but when the blood runs away slowly and uninterruptedly, and in all cases where a large quantity has been lost, and perhaps several hours after the bleeding has ceased, the patient may have a determination of blood to the brain, accompanied with intense headache and extreme intolerance to light; the face will be flushed, the temporal arteries will throb, and the brain symptoms will closely simulate inflammation of the brain. Indeed, this erroneous diagnosis has often been made, and the patient bled for a malady caused by the loss of blood. Perfect quiet, cold applications to the head, and warm ones to the feet, are the remedial measures.

Convulsions.—When convulsions occur during labor, they may generally be relieved by the measures mentioned in a preceding chapter; but if not, the labor must be hastened by all the appliances adapted to the circumstances of each particular case, as explained in other parts of this work; they are often traceable to some local irritation, as constipation, congestion of the brain, engorgement of the liver, etc.; hence an enema, cold applications to the head, or fomentations over the region of the liver, are indicated.

Catalepsy.—This term is applied to a form of spasmodic disease, in which the limbs maintain a persistent uniform position during the paroxysm. Convulsions, catalepsy and epilepsy are modifications of the same essential malady.

Delirium.—Mental disturbances taking the form of mania or insanity may occur during labor. When attended with "rush of blood" to the head, a flushed face, intolerance of light and sound, and severe pain in the head, it is apt to be mistaken for inflammation; but, be it inflammation or mania, the patient should never be bled nor reduced in any manner. The treatment mentioned in the preceding paragraph is applicable here.

CHAPTER XVI.

Disorders During Lactation.

For the convenience of methodical arrangement I shall consider, in the present chapter, all the diseases and accidents which are incident to the period, dating from the completion of labor to the end of nursing, with the partial exception of hemorrhage and brain fever, which may occur during or after delivery, and have been treated of in the preceding chapter.

Lacerations.—When the soft parts are bruised or torn, quiet, and the application of cool wet cloths should be prescribed. If the perineum is extensively lacerated, it is a case for the surgeon. In some cases the rupture extends from the vagina to the rectum, entirely dividing the partition between them. In this case the woman should keep to the bed, and be as quiet as possible until a competent operator takes the case in hand. Fortunately this accident, once so irremediable, is now among the curable disorders.

Thrombus.—An extravasation of blood into the vulva may occur after labor. It differs from a *varicose* tumor, in that the blood is collected in the cellular structure of the soft parts, instead of being contained in the vessels. It is usually caused by prolonged and severe pressure; but any mechanical injury may occasion it—hence it sometimes affects the non-parturient woman.

It may also occur during labor and greatly impede the delivery; or it may cause retention of urine and fæces by pressing on the bladder and bowels. In some cases the tumor bleeds profusely.

When the tumor impedes delivery, it should be freely opened, the fluid evacuated, and the further loss of blood restrained by the tampon. After delivery, the applications should be ice

water, or pressure by pieces of sponge dipped in the coldest water.

Retention of Urine.—When the urine is not expelled from the bladder, this organ becomes so stretched and enlarged as to form a tumor very distinctly felt at the lower part of the abdomen, and which is more or less painful to pressure according to the degree of distension. Retention should always be suspected when the patient has not urinated for twelve hours. The alternate application of hot and cold water will generally relieve promptly, if not, the catheter must be employed.

It is a singular fact that there is such a sympathy between certain sights and sounds and the muscles of the organs which are under the equal and joint control of the mental and vital powers, as the bowels, bladder, and uterus at full term, that mental impressions may frequently be employed as very efficient remedies. We have seen how a mental shock may suspend uterine contractions, and all physicians know how readily fear may excite inordinate action of the bowels. A mental shock has often paralyzed the sphincter muscles of the bladder in an instant, so that the urine flowed without any power on the part of the patient to restrain it. It is on this principle that we have a remedy which is often promptly effective in the case of retention. It consists in pouring a stream of water, within the hearing of the patient, very slowly from one vessel into another, as from a pitcher into a pail. I have known this to relieve instantaneously.

Incontinence of Urine.—An inability to retain the urine is sometimes caused by the prolonged pressure of the presenting part of the child on the neck of the bladder, inducing paralysis of the sphincter muscles. Hot and cold applications are the remedies, to be applied alternately.

Tympanites.—Great distress because of accumulated gases in the intestinal tract, sometimes occurs, especially after severe flooding or prolonged labors. In some cases the abdomen becomes extremely tender to the touch, when inflammation is apt to be erroneously diagnosticated. Sips of water, and wet

cloths, of the temperature most agreeable to the patient, are the remedies.

Perineal Paralysis.—Some authors mention this as among the effects of tedious labors—the perineum being pressed upon until its muscular tissue has lost all power of contraction, rendering defecation difficult, and constituting a great impediment to walking. I am of the opinion that constipated bowels have more to do in its causation than pressure. The remedies are, hot and cold applications alternated, the ascending douche, and electrical currents.

After-pains.—The patient usually has a few pains soon after the placenta has been removed, which indicate the contractions of the uterus in expelling whatever coagula, fluids, or shreds of membranes may remain. In feeble women, those addicted to tight lacing, or sedentary habits, these after-pains are sometimes severe and very distressing. The remedy consists in invigorating and regulating the contractions, as in the case of feeble or spasmodic uterine action,—alternate hot and cold applications, with abdominal manipulations.

Hardened Fæces.—In some cases, indeed in many, the lower portions of the intestinal canal are obstructed, involving the rectum or colon, producing spasmodic or colic pains, a sense of heaviness and weakness in the abdomen, and endangering puerperal fever. This condition results from habitual constipation and inattention to the movements of the bowels during the latter period of pregnancy. Enemas of tepid water are the special therapeutics.

Suppressed Lochia.— For several days after child-birth there is usually a discharge from the vagina; sanguineous at first, then serous or watery, and finally mucous or muco-purulent. The quantity depends principally on the more or less plethoric condition of the patient. In debilitated or gross women it may continue for several weeks, to be, sometimes, succeeded by leucorrhœa.

When the discharge is suddenly checked or arrested in consequence of cold or other cause, the patient will suffer of deter-

mination to the brain, flushed face, headache, and perhaps delirium. Warm foot baths, fomentations to the abdomen, and cold applications to the head will generally relieve all the symptoms very promptly.

Milk Fever.—The febrile disturbance to which this term is applied, usually appears in a day or two after confinement. Commonly there is more or less chilliness, followed by feverishness and attended with a temporary suspension of the lochial discharge. No treatment is required save a tepid ablution, in the hot stage, and warm applications to the feet if they are inclined to coldness. Unless the bowels are free an enema of warm water should be employed.

Weed Fever.—This affection, termed also *ephemeral fever*, is similar to the preceding, but more severe, and usually appears about one week after confinement. It simulates a one-day intermittent; the cold stage is very prolonged, the hot stage violent, and profuse perspiration attends the sweating stage. It is important not to confound this malady with puerperal fever. It can readily be distinguished by the absence of abdominal tenderness. The treatment is the same as for milk fever.

Sore Nipples.—The nipples are sometimes excoriated or fissured, and become excessively tender, rendering nursing very distressing to the mother. The nipple should be anointed with unsalted beef or mutton, tallow, or simple cerate, and covered with a cloth wet in the coldest water, which should be frequently renewed. Before the infant is applied to the breast the ointment must be removed by means of a soft cloth or sponge, and warm suds of castile soap. It is better to have the child draw the milk through the nipple shield, as less washing of the nipples is required, while the child's mouth and nipples are each protected from the irritation of contact. It is important that the milk should be drawn regularly, or engorgement, inflammation, and abscess might result.

Defective Nipple.—A flat or sunken condition of the nipple, sometimes accompanied with a deformed or imperfectly developed breast, is among the incidents of motherhood requiring medication. The child cannot grasp the nipple so as to draw

its necessary "rations," and the mother is both grieved and fretted because of it.

The difficulty may be remedied in various ways, the principle of treatment being that of a congestor, or suction-pump, as in dry cupping or well-pumping. Many devices have been successfully employed, all connected with an air-pump; but the suction bottle is generally effective, and always at hand. Any small bottle with a long neck, as the ordinary pint bottle or a quart bottle, may be filled with hot water, the water poured out, and the mouth of the bottle immediately applied over the nipple. After a few applications, sometimes after a single one, the child will procure its "meat" and meal without difficulty.

Quantity of Milk.—Where the supply is insufficient the breasts should be fomented occasionally, followed by friction with a cold wet cloth; the diet should be largely of good ripe fruit, and all irritating and thirst-provoking seasonings avoided. When the secretion is too abundant, cold applications to the breasts and a drier dietary are proper.

Quality of Milk.—This must depend principally on the dietetic habits of the patient. Plain simple food, well masticated, with little or no seasonings, and with little or no drink at meals, are the essentials. Nothing is more pernicious than stimulating drinks—wine, ale, coffee, etc., so frequently commended as enrichers of the lacteal fluid.

Excessive Nursing.—This term is applied to mothers who become sickly and exhausted while suckling their infants; or who manifest a predisposition to mania or insanity. If attention to all the conditions of health does not soon arrest the difficulty, weaning should be commenced at once. To undertake to force the milk or sustain the patient by stimulation is ruinous to both mother and child.

Nor should the mother ever nurse one child while pregnant with another. Pregnancy and lactation are incompatible processes, and for a woman to undertake to do both at the same time is certain to injure both herself and the present and prospective offspring, with the possibility of destroying one or all.

Mammary Abscess.—This is one of the most common and one of the most distressing ailments of the lying-in chamber The drain on the patient's vitality is damaging to both mother and child, and the patient is sometimes prostrated for months. I have, however, never known a "broken breast" occur when the woman was reasonably Hygienic during pregnancy. It is always the result of mismanagement, bad living, or very bad medication.

To prevent abscess from forming, the child should be early and frequently applied to the breast—whether it contain milk or not, provided it is full and tender.

If the breast become hot and painful, cold wet cloths should be constantly applied until the preternatural temperature is reduced. If the infant is too feeble to draw the breast properly, the nurse may prevent a long and tedious illness by drawing a little milk occasionally. If she is too awkward or fastidious to nurse the natural way, she may draw the milk through the nipple shield ; a young pup is an excellent and very popular *sucking machine*, and should be obtained if necessary and practicable.

The diet must in all these cases be solid and as dry as possible ; all slop food, and all fluids except for actual thirst being abstained from. If the patient is inclined to general feverishness, the tepid ablution daily should not be neglected. The feet should be kept warm, the head cool, and the room as cool as is consistent with comfort, and well ventilated.

If the inflamed breast passes to the stage of suppuration despite all preventive measures, indicated by extreme distention, throbbing pains, and rigors or chills, poultices of bread and milk, or flour of slippery elm, should be applied.

Puerperal Fever. This dread disease, sometimes termed *peritonitis*, is the most formidable and fatal of all the maladies incident to parturition. It is frequently termed child-bed fever, because it occurs a few days after child-birth. It is truly an inflammation of the *peritoneum*,—the lining serous membrane of the abdominal cavity—involving more or less the uterus and intestines in extreme cases. Nothing can be more discordant than the opinions of medical men regarding its essential nature

or proper mode of treatment. While some regard the disease as specific, like yellow fever or small-pox, others regard it as ordinary inflammation with symptomatic fever, and others still consider it to be ordinary fever with the complication of peritoneal or uterine inflammation. As to treatment, some authors and practitioners of eminence and experience recommend bleeding and the reducing regimen; and others of equal reputation and ability condemn depletion of every kind, and prescribe opium and stimulants. A third and perhaps intermediate class of physicians reject both the depleting and the stimulating plan, and rely mainly on local treatment, cathartic drugs, turpentine fomentations, mercurials, etc.

M. Trosseau, a French physician, regards the disease as common to pregnant and non-pregnant, ante or post-parturient women, although the latter are much the most liable to it. His language is, as quoted by Bedford: "The lying-in female exhibits peculiar *morbid opportunity*, and presents a *remarkable pathological aptitude* for the malady."

Such language presupposes that diseases are entities, watching for an opportunity to "attack" some one, as a wolf watches for a "morbid opportunity" to get into the sheep-fold, or a vulture watches for *some* opportunity to pounce upon a lamb, should it exhibit a "pathological aptitude." Such absurd notions of the nature of disease have prevailed in the medical profession quite too long already.

Some authors distinguish puerperal fever into *inflammatory*, *typhoid*, *bilious*, *mucous*, *sporadic*, *epidemic*, etc. These distinctions are practically useless, besides being theoretically erroneous. The disease, in all cases, is inflammatory in nature and typhoid in form, whether it be mild or severe; that is to say, there is an inflammation of the peritoneum accompanied with a fever of the typhoid character.

Statistics gathered from the New York, Philadelphia, London and Paris hospitals show that a large majority of cases of puerperal fever are fatal. But I have never known a fatal case under Hygienic treatment, and I have had several cases to

manage, and have known of a score or more successfully treated by other Hygienic physicians.

The disease usually appears the second or third day after delivery, with symptoms of ordinary fever, soon followed by extreme tenderness and swelling of the abdomen. The tension and pain of the abdomen are so great that the patient usually remains on the back and draws up the knees to relieve the inflamed part, and the congested organs adjacent, from pressure.

The Hygienic treatment is as simple as it is effectual. So long as there is painful distention of the abdomen, with preternatural heat, keep the part constantly covered with *cold* wet cloths; free the bowels with tepid enema; keep the feet at the normal temperature; apply a cool wet napkin to the head; sponge the whole surface once, twice or thrice a day, according to the degree of heat. If the abdomen continues painful or distended after the morbid heat abates, apply warm fomentations for five to ten minutes once an hour or two. Continue these appliances as the symptoms appear until the patient is well.

Milk-Leg.—This affection—*phlegmatiadolens*, of medical books—is so termed because of the whitish and glistening appearance of one or both lower extremities. It rarely affects but one at the same time. It is an inflammatory affection mostly confined to the lymphatic absorbents and glands, the discoloration being attributable to an obstruction of the lymph in its passage towards the heart. The pain usually commences in the groin and extends downwards, with a swelling of the limb; but sometimes the pain and swelling commence at the feet and extend upward. The femoral vein is sometimes so tense as to roll under the finger like a cord. In a short time, if the inflammation is not promptly and properly treated, the limb becomes œdematous or dropsical.

The disease is said to have a "preferential affinity" for the left leg, but why, no one has offered any other explanation than vague conjecture.

The plan of treatment is precisely the same as for puerperal fever.

CHAPTER XVII.

Disorders of Infancy.

The diseases incident to infancy seem to become more numerous and complicated as the habits of society become more luxurious, and the occupations of mothers more sedentary. Many of these affections are, therefore, inherited infirmities or predispositions, while others are due to accidents and maltreatment after birth.

Asphyxia.—This term is properly applied to impeded respiration; but if the child does not breathe after birth, it is often said to be *asphyxiated*, although the respiratory function has never been established. The child is breathless, but not pulseless, as in true asphyxia.

The first thing to do is to remove all mechanical obstructions, if any exist, from the mouth, as mentioned in the chapter on management of labor. In the next place, hot and cold water should be applied in rapid alternation to the chest and back. The temperature should be a little above 100°, and as low as 40° if possible. Dipping the entire body in warm and cold water alternately, is often speedily successful in inducing respiration. If these measures fail, the "Ready method" of Dr. Marshall Hall should be resorted to, which consists in placing the child in the prone position, and alternately but rapidly changing it from this position to the side, and *vice versa*, making moderate pressure along the back and ribs while in the *prone* position. The rationale of this proceeding is, as explained in Dr. Hall's own words: "Experiments innumerable have demonstrated that if the subject be laid *prone*, and pressure briskly made on the back, there is good *ex*piration, and that, if the pressure be removed, and the body turned on *its side, and a little more*, there is good *in*spiration; that if

this pronation and pressure, and this removal of the pressure and rotation be instituted *alternately*, there is good *respiration*."

How long the new-born child may live without breathing is very uncertain, and much doubtless depends on inherent vitality. Cases are well authenticated in which still-born infants have been restored after remaining breathless for an hour or more. The average period of resuscitation, as determined from the statistics which have been collected on the subject, is a fraction more than thirty-five minutes.

The Blue Disease.—This is occasioned by the malformation of the heart, as explained in the chapter on the fœtus in utero. Soon after birth the child's face and finger-tips exhibit a livid-blue color; the whole body inclines to coldness, the heart beats irregularly, and fainting turns or paroxysms of suffocation occur. Nothing can be done in the way of special medication. The child may be raised by careful attention to all hygienic habits.

Occlusion of the Anus.—This phrase is applied to an obstruction of the rectum, or lower portion of the intestinal tube, which prevents all discharges from the bowels. The opening may be closed by a thin membrane or skin, or the obstruction be an inch or several inches from the anal outlet. In the former case the obstruction can be readily incised, and in the latter a trochar should be introduced by a competent surgeon. When this difficulty exists it will be manifested in ten or twelve hours after birth by the distention of the abdomen, the piteous moaning, refusing the breast, haggard countenance, and general restlessness.

Jaundice.—This affection sometimes appears soon after birth. It is owing to inherited torpidity of the liver. It does not require any special treatment. The yellowness of the skin will generally disappear in a short time if the little patient is fed properly.

Crusta Lactea.—This affection (*milk-crust*) most frequently occurs during dentition, but sometimes appears soon after birth. It consists of an eruption of irregular groups of little pustules upon the face and scalp, which discharge a viscid and

yellow or greenish fluid. The itching is sometimes excessively annoying.

Many astringent and caustic applications are recommended in medical books, but they are liable to repel the eruption to the membranes of the brain or lungs. Thorough cleanliness in all respects, gentle ablutions of tepid water every morning, and the application of a little inodorous glycerine, constitute the safe remedial plan.

Apthæ.—The "*sore mouth*" of infants consists of inflamed and ulcerated spots, the result of disordered digestive organs or of irritating food or condiments. These causes sufficiently indicate the remedial plan. A teaspoonful of cold water, several times a day, will alleviate the pain and hasten the healing process.

Thrush.—This and the preceding affection are indiscriminately called *canker* in common parlance. It is an erysipelatous inflammation of the mucous membrane of the mouth, often extending to the stomach and intestines, and sometimes throughout the whole alimentary canal. The tongue and lining membrane of the mouth exhibit whitish granular depositions analogous to curdled milk, which run together. It is a much worse disease to manage than apthæ, and often renders nursing difficult and painful, and sometimes impossible. Foul air, damp rooms, unwashed nipples, sugar teats, &c., are among the common causes. Not unfrequently the disease in its very worst form is traceable to overheating, worrying, &c., on the part of the mother during pregnancy. The most aggravated cases I have ever known were clearly attributable to excessive toil and constant trouble of the mother preceding the period of quickening.

To remedy this ailment the mother must abandon every indigestible or irritating article of food and drink, or wean the child. In either case the utmost care should be taken in relation to bathing, dressing, ventilation, &c. Indeed, all the appliances of Hygiene must be made available, or the patient will either die soon or become a chronic invalid for life.

Chafing.—Excoriations often occur between the limbs, and under the arm-pits. The abraded surfaces should be wiped clean with a soft cloth wet in cool water, and dusted with fine flour, or rice powder. Proper attention to cleanliness will obviate this difficulty.

Erysipelas.—This is a frequent affection of early infancy, and may affect any part of the body. It usually takes the form of *herpes*, or *ringworm*, but sometimes spreads rapidly over the surface like the fever of the same name. It is attributable to a bilious condition of the blood, and may be aggravated by irritant washes, bad soap, alcoholic stimulants, and uncleanliness. Tepid ablutions are all the treatment required.

Eruptions.—Hot or ill-ventilated rooms, and gastric or biliary disorders, especially when teething, sometimes cause pimples resembling flea-bites to appear on the face, neck, or even over the whole body. They require no medication.

Nettle-Rash.—An eruption of wheals with red bases and white summits raised irregularly on various parts of the body, is termed nettle-rash, on account of the appearance and itching resembling those occasioned by the sting of nettles. It is worse when the child is in bed, or suddenly exposed to a cool atmosphere, and is always aggravated by rubbing the skin. The cause is improper food, and the remedy, a correct dietary with gentle sponging of moderately cool water.

Red-Gum.—This eruption usually appears when teething, and consists of small pimples, scattered or in groups, about the size of pin's heads, and very closely resembling the eruption of measles. It may, however, be easily distinguished from measles by the absence of catarrhal and febrile symptoms. No special medication is required.

Hives.—In this affection the skin rises in blotches of a whitish color attended with intolerable itching. Keep the bowels free, and rub the parts affected gently two or three times a day with a soft cloth wet in cool but not cold water.

Crying.—Healthy infants do very little crying, and never cry during the night. But with multitudes of babies crying seem

to be the rule because health is the exception. A healthy child will not cry when it is hungry, unless deprived of its victuals until it becomes *morbidly* impatient, and then it is sick. A child may cry of hunger after its stomach is full; because the food is not of proper nourishing quality, just as dyspeptics often feel a craving for food with an overloaded stomach. The cry of hunger is evinced by symptoms of uneasiness all over and dissatisfaction all through, such as throwing the arms about, turning the head to the breast, and opening the mouth to every thing that approaches it as though eager to swallow anything.

A sip of water will sometimes appease the child, so that it will fall asleep. The mother should see to her own dietetic habits, that she may supply a sufficiency of wholesome nutriment; but if this cannot be accomplished, other sources should be resorted to.

The child should always take each meal from each breast, or one breast may become so engorged as to impair the quality of its secretion. And if the child is feeble, or the milk so abundant that the breasts are not well emptied, the milk should be drawn with the breast-pump, or breast-glasses worn. The breasts may be so distended as to be painful and render it impossible for the child to hold the nipple, in which case a little milk should be drawn with the breast-pump before the child is applied.

When the child cries because normal hunger is unsatisfied, it becomes quiet the moment it is fed. If a child cries after partaking of an ordinary meal of wholesome food, it is certainly sick, or its clothing is in some manner wrong.

Wheezing, or asthmatic breathing, with or without crying, denotes congestion or enlargement of the liver, and *not*, as some authors say, "weakness, or an asphysiated or apoplectic condition."

An unappeasable, or *yelling*, or *screaming* cry, indicates colic.

When sleepiness induces crying, the child manifests a disposition to lie down.

Ear-ache, teething, pain in the chest, stomach, or limbs, as

from the prick of a pin, or any injury, occasion manifestations which point directly to the part affected.

If the child's cries are aggravated by coughing, it indicates pneumonia, or bronchitis, or a condition nearly approximating them.

But a vast amount of crying is not clearly traceable to any exciting cause. But there is one very common cause of very distressing crying paroxysms, which are attributable to the maltreatment of parents, who mean well, but are very ignorant of the nature and requirements of babies. I mean injudicious fondling. The child is made to laugh so inordinately as to occasion partial delirium, or painful congestion of the brain, when it will yell and scream as hard as it has been forced to laugh—with interest. I have often seen fond but foolish parents raise their little children, about a year old, by taking hold of their little legs, as high above their own heads as they could well reach, and then moving them down and up with a rapidity that makes the child laugh excessively and convulsively, with mingled emotions of pleasure and terror. But the laughing was soon succeeded by an irrepressible screaming.

Some nurses have a pernicious habit of bouncing babies who just begin to sit up, on their knees, with a violence that endangers curvature of the spine, and congestion of the viscera. And another, and a very common manner in which infants from six to twelve months of age are abused by ignorant or reckless nurses ought to be mentioned in this place. I mean holding them head downward. This will instantly quiet the most restless and unruly child, by inducing an apoplectic condition of the brain which stupefies it and destroys sensibility for a time. Those mothers who send their little ones into the parks and fields away from personal observation, should look to this matter, lest when Bridget has pleasant companions, and the child is troublesome, she resort to this method of rendering it *good-natured!*

Hernia.—Injudicious traction on the cord, or other improper management, as well as constitutional infirmity, may occasion

a protrusion of the bowel at the navel, constituting umbilical hernia. The bowel should be gently pressed back with the fingers, and retained with a small piece of sheet lead secured with a bandage.

Inflammation of the navel.—After the separation of the cord, the navel sometimes becomes excoriated, or affected with an erysipelatous kind of inflammation, in some cases followed by ulceration and sloughing.

Bathe the affected part with cool water, two or three times a day, and keep it well dusted with rice flour, or prepared chalk.

Locked-jaw.—The locked jaw—*Trismus nascentium*,—which sometimes afflicts infants soon after birth, is generally owing to the inclusion of a portion of protruded intestine in the ligature with which the cord is tied. When this malady exists, this circumstance must be attended to, as in the case of hernia. Rudely pulling the cord at the umbilicus, before or during ligation may occasion inflammation, hernia, or locked-jaw, or all. Hence carefulness.

Hemorrhage. — Bleeding from the umbilicus is of rare occurrence, and generally, although not always, happens soon after the cord becomes separated from the navel. When the bleeding is profuse, it is almost always fatal, the cause being a frail and cachectic condition of the whole organization; cold applications, lint, or soft sponge, secured with a bandage, are the only available resources. The ligature and caustic are proper in desperate cases, but these require the presence of the competent medical adviser.

Constipation.—Many infants inherit a predisposition to torpid bowels; indeed, this can not be otherwise, so long as the majority of women are constipated during pregnancy—in fact, during life. And when it is considered that nearly all mothers use constipating food, we find ample explanation of the numerous diseases which disturb the stomach and bowels, to say nothing of the blood and brains, of their offspring.

The only remedy is proper food on the part of the mother while the child nurses, and proper food for the child afterwards.

Colic.—This is always symptomatic of indigestion, and the indirect result of constipation. The child cries spasmodically, and flexes the limbs by drawing them towards the abdomen.

Give the child warm water to swallow, and foment the abdomen.

Flatulence.—The causes are the same as those of colic. The abdomen is sometimes greatly distended, very painful, and seriously disturbing the respiration. The remedies are warm water, and fomentations.

Retention of Urine.—If the child does not urinate soon after birth, it is a case of retention; and if urination do not occur in twelve hours, fomentations should be applied to the abdomen and genital organs for a few minutes, followed by a dash of cool water. If these measures fail, give an enema of warm water, and, if need be, a warm bath, followed by gentle percussions to the lower part of the abdomen.

Vomiting.—The infant may eject the contents of the stomach because of indigestion and distention, or improper ingesta; rolling and tossing the child soon after nursing often induces vomiting, as does tight bandaging. Indigestible things of any kind, whether termed foods, drinks, medicines, or poisons, may occasion vomiting. Ascertain the cause and remove or correct it.

Hiccough.—This is a spasmodic action of the respiratory muscles, mainly of the diaphragm and abdominal walls, by which the air is forcibly pushed against the motionless glottis. It is always owing to gastric irritation. Sips of warm water, kneading the abdomen, percussing the spine, fixing the attention intensely, etc., have relieved. Many nostrums have a reputation in the nursery, but they are not worth mentioning.

Restlessness.—Infants and children are often restless, sleepless, disposed to cry, and perverse in various ways without any cause apparent to the careless observer. If put to bed at the usual hour in apparent health, it may awake at any time, or many times during the night, and cry or scream as though severely distressed or badly affrighted. These spells are usually

attributed to worms, but probably the worms are not guilty of making the disturbance in one case in a hundred; the whole trouble comes from improper food; the bowels are constipated, the liver engorged, the brain congested, and then the stupor of apoplexy, or some form of disquietude is inevitable. Attend to the diet; let the child have an early and a light supper, and see that its bowels move regularly. If anything more is necessary, give it a warm bath at bed-time.

Ophthalmia.—The form of inflammation of the eyes which frequently affects frail and scrofulous children, two or three days after birth, is termed *ophthalmia neonatorum*, or *purulent ophthalmia.* It is a dangerous malady, and unless properly and promptly treated, the eyes may be irretrievably ruined. The white of the eye (conjunctiva) is the part primarily affected from which the inflammation, and often ulceration, extend to all the other structures of the eye. The disease commences with a slight weeping; this is soon followed by redness; this is soon succeeded by a muco-purulent discharge, when the eyelids become agglutinated by the morbid excretion.

In the plan of treatment the diet must be regulated, the room well ventilated, the whole surface cleansed with tepid water, and the eyes washed of all adhesive matter by means of a very soft sponge moistened with tepid water. The lids should be everted so that no particle of offensive matter is allowed to remain. After the child falls asleep the lids should be smeared with fresh olive oil to prevent sticking together; these processes should be repeated three or four times a day. When there is much heat in the eyes, a gentle stream of water made to run upon the eyes for hours, or until the temperature becomes natural, and the redness disappears, has been found highly beneficial.

Gravel.—Infants are subject to calculus concretions, attended with painful discharges of bloody urine, having a mucous or purulent sediment. As these concretions are the result of saline, earthy and mineral matters taken into the mass of blood, as lime, salt, saleratus, etc., the remedy consists in

keeping them away. These complaints are comparatively common where hard water is employed in drinking and cooking.

Dropsy of the Head.—Hydrocephalus sometimes affects the new-born child, or appears soon after birth. It is known by the enlargement of the upper portion of the head, and the remarkable separation of the cranial bones at the sutures and fontanelles. Little can be done in the way of special treatment. Keeping the skin open, the bowels free, the feet warm, and the blood pure, may enable the process of absorption to remove the fluids from the brain eventually.

Inflamed Gums.—The process of teething is often attended with a swollen and painful condition of the gums, rendering the child peculiarly susceptible to other morbific influences, and predisposing to bowel complaints and convulsions. The conditions which should be especially guarded against during dentition, are constipation and feverishness; unless one or both of these occur, nothing very serious can happen to the child while the teeth are passing through the gums. A proper dietary and the tepid ablution are the preventive measures.

When the child manifests uneasiness or distress, with an inclination to bite or to put its fingers into its mouth, the teeth are nearly through the gums; and the process may be facilitated, and the irritation greatly alleviated by giving the child some moderately firm but elastic substance to exercise its growing teeth upon. Nothing can be better than the natural provision for this purpose—the mother's finger. Next in the order of usefulness are the rubber rings. Lancing the gums is never necessary if the bowels and skin are properly attended to.

CHAPTER XVIII.

Disorders of Childhood.

The period of childhood, properly reckoned from weaning to puberty—from infancy to youth—is liable to many diseases, some of which are common to this and other periods of life, while others are peculiar to childhood. Both of these classes of diseases will be considered in the present chapter.

Odontalgia.—Children seldom have toothache until the permanent teeth are developed, and then stomachic derangement or constipation is almost always the immediate cause. I have known children raised from birth to adult age without the slightest pang of distress in the gums or teeth. Of course they were dieted on "strictly Hygienic principles." Whatever causes induce colds and fever, may predispose to toothache, but colds and fever never occur without there is obstruction in some of the respiratory organs. Fasting, and holding water in the mouth of the temperature that is most soothing, are the remedies for toothache. The warm bath and an enema of tepid water are proper in protracted cases.

Dampness.—This term is commonly applied to an excretion of viscid matter behind the ears, which, in drying, forms a crust or scurf. When the scurf falls off the skin appears inflamed and moist, amounting to a superficial excoriation. The part should be washed clean with tepid water, dusted with rice flour, and then covered with dry lint.

Otorrhœa.—Running at the ears is a frequent sequel of severe or maltreated scarlet fever or measles, but may be induced by colds, repelled eruptions, and other causes. Scrofulous children are especially liable to this affection. Syringing the ear gently with tepid water once or twice a day is all the special treatment indicated. The cure must be effected by the

means which improve the general health. When deafness results, electricity is appropriate.

Otalgia.—Earache may be the consequence of inflammation, or it may be of a neuralgic character; apply warm wet cloths.

Otitis.—Inflammation of the ear is manifested by a violent burning, itching, or throbbing pain, deep seated in the ears, accompanied with general feverishness. Apply cold or cool wet cloths so long as the feverish heat continues; afterwards tepid or warm applications. The fever should be treated with tepid or moderately cool ablutions, repeated with a frequency to be regulated by the degree of external heat. The wet-sheet pack is admirable when well managed.

Colds and Coughs.—Recent colds can be successfully treated with the warm bath. It should be taken at bed-time, and continued each evening until the symptoms disappear. Coughs are never dangerous in themselves, and are promptly relieved by means of warm foot baths, and sips of warm water. But when coughing is symptomatic of influenza, pneumonia or other maladies, the treatment must be directed to the primary malady.

Whooping Cough.—This well-known contagious disease may affect infants, but is more common in children after weaning. The early symptoms do not differ essentially from those of a common cold, attended with cough, and may continue with varying degrees of severity for about two weeks, when the peculiar "whoop" settles the diagnosis. After this the coughing is attended with paroxysms of strangling and the expectoration of a tenacious mucus. Vomiting is a frequent concomitant of these convulsive paroxysms. In extreme cases blood runs from the mouth, nostrils, eyes, and ears. This stage usually lasts two or three weeks, when, if the case has been properly managed, convalescence is rapid; otherwise the malady may linger for months, if it do not ultimately terminate in consumption.

The Hygienic treatment always renders whooping cough mild, and its duration comparatively brief. The paroxysm of

coughing can be relieved by draughts of warm water, and the general feverishness allayed with tepid ablutions. If the patient complains of much soreness of the chest, or is very restless during the night, a warm bath at bed-time is appropriate. The bowels should be kept free, and all clogging or "bilious" articles, as butter, sugar, grease, &c., excluded from the dietary.

Croup.—This is one of the most common maladies of early childhood. Scrofulous and plethoric children are most subject to it. All "rich" (gross) kinds of food predispose to it, as candies, sweet cakes, greasy admixtures, fried dishes, &c.

Authors distinguish two forms of croup: *true* and *false*, or *membraneous* and *non-membraneous*. But they only differ in degree. In the former case the fibrinous exudation which forms on the mucous lining of the wind-pipe (*trachea*) concretes into a membraneous covering, and in the latter case, the excreted matter is expectorated without consolidation.

The early symptoms are wheezy inspiration, with some difficulty of breathing, without fever, soon followed by the shrill, ringing inspirations and oppressed breathing which are peculiar to the disease. The patient now manifests the low or typhoid form of fever which is an essential accompaniment. After a few hours, or days, the symptoms will gradually disappear, or the patient will die of exhaustion or suffocation.

The essential point in the successful treatment of croup is to check the exudation into the wind-pipe, and prevent the formation of what is called a *false membrane*, as this must necessarily be detached from the mucous surface, and if it is not expelled through the narrow glottis, the patient must be inevitably choked to death.

The throat must be enveloped in cold wet cloths, the colder the better—and often renewed until the preternatural heat is subdued. In extreme cases pounded ice is better. If the surface is hot and feverish, tepid ablutions are indicated as in the hot stage of all fevers and inflammations. If the superficial heat is unequal, and the extremities inclined to coldness,

the warm bath and hot applications to the feet are necessary. The expectoration of the adhesive excretion may be facilitated by means of sips of warm water, and the vapor or steam of hot water. The early treatment should always be prompt and vigorous, as, in most cases, the result depends on arresting the morbid excretion at once.

Diphtheria.—This affection differs from the former only in the fact that the seat of the exudation is principally in the mouth, while in croup it is principally in the wind-pipe. Each may run into the other, by the extension of the local inflammation. In diphtheria, however, the fibrinous matter exuded on the mucous surface does not concrete into a false membrane as it may in croup, owing to the different locality. In many cases the masses of matter washed from the tongue, tonsils, and mouth, resemble patches of semi-concreted membranous matter,—a fact which indicates the pathological identity of croup and diphtheria.

The plan of treatment is precisely the same as that for croup, with the exception that, as the mouth is the seat of the exudation, cold water or bits of ice can be advantageously applied directly to the inflamed part. Pieces of ice may be kept in the mouth, and allowed to melt, or finely shaved or pounded ice put into the mouth to produce more rapid refrigeration.

There is little danger of this formidable disease, which often desolates the family circle of all the little ones, terminating fatally, if this plan of treatment is thoroughly carried out—unless in a very frail and scrofulous child. Nor have I yet known it fail in but one such case.

Pneumonia.—Inflammation of the lungs is among the diseases that are charged with destroying multitudes of children. But I cannot regard the disease, although very distressing, as essentially dangerous. Pneumonia (*pneumonitis*) is always attended with fever, which may be of the inflammatory or typhoid form; and if typhoid, it may be of the kind termed putrid, or that termed nervous. The local affection (inflam-

mation) may involve one lung or both. The symptoms are pain in the chest, aggravated on coughing, coughing, short breath, expectoration, and general fever.

The difficulty and all the danger in pneumonia consist in disproportionate accumulation of blood in the lungs. This occasions a sense of weight or heaviness, and impedes the full expansion of the lungs. But, as the structure of the lungs is mainly a spongy mass of fibrous channels and air cells, the organs can bear an immense engorgement or congestion without disorganization. All that is necessary to restore health is to determine the blood from the lungs to other parts of the body, and thus restore the balance of circulation.

The treatment may vary according to the temperature of the body. If the whole surface is preternaturally hot, the tepid bath, or tepid ablutions, are proper. If the patient is chilly, apply warm fomentations to the abdomen, and warm applications to the feet. If some parts of the surface are hot and others cold, apply fomentations to the cold places, and cold wet cloths to the hot places. Move the bowels (unless diarrhœa exist) with tepid enema. If the cough is distressing, or the expectoration difficult, let the patient have frequent draughts of warm water. Where the patient is thirsty, cool water may be allowed without restraint, until the sensation is allayed.

Influenza.—This is a modified form of pneumonia, the peculiarity consisting of a slight catarrhal complication. There is extreme congestion of the lungs with little acute pain, and a low form of fever. The "epizootic" of animals, sometimes called "catarrhal fever," is nothing more nor less than influenza. The treatment is the same as for pneumonia.

Bronchitis.—As commonly employed, this term is a misnomer, for it is usually applied to affections of the mouth and upper part of the wind-pipe,—"throat ail," and *laryngitis*. The real bronchitis is an inflammation of the mucous membrane which lines the ramifications of the wind-pipe (bronchial tubes), in the lungs. When authors describe it as "commencing with the common catarrhal symptoms," &c., they confound it with

pneumonia and influenza. Its symptoms differ from these diseases mainly in the sense of pain and soreness or heaviness being more diffused, the difficulty of breathing greater, and the expectoration more copious. But as the symptoms so closely resemble pneumonia, and as it requires precisely the same treatment, it is hardly worth while for the non-professional reader to attempt the differential diagnosis.

Catarrh. — Children are not often affected with chronic catarrh, but the acute form is frequently occasioned by undue exposures. It is an inflammation of the mucuous membrane of the nostrils, manifested by dryness, irritation, and sneezing, succeeded by smarting, and a mucous, and then muco-purulent discharge. Abstemious diet, a warm bath, hot and cold foot-baths, and an equable temperature, constitute the remedial plan.

Crowing Disease.—This is a spasmodic affection of the muscles of the wind-pipe (*trachea*), which closes the glottis and threatens suffocation. It is termed *crowing disease* or *crowing inspiration*, because the patient makes a noise similar to that attending the inhalation of air in croup or whooping cough. It is also known in medical books by the terms "*spasm of the glottis*," "*asthma of children*," and "*laryngismus stridulus*."

During the paroxyms, which occur at irregular intervals, the patient struggles for breath and seems to be actually strangling. In some cases the struggling terminates in a general convulsion. If coughing or crying occur the paroxysm is ended.

The warm bath, fomentations to the abdomen, and cold water or ice in the mouth, are the remedies. If the warm bath is not immediately available, use the warm foot-bath, and dash warm and cold water alternately on the spinal column.

Mumps.—This is a contagious disease, and consists of an inflammation of the parotid glands. It is known by a painful swelling behind the ears, with more or less feverishness. It affects children of all ages, though rarely infants. A warm bath, an equable temperature for two or three days, and an abstemious dietary, are all the medication required.

Convulsions.—The lists of deaths of this disease are fearful, with a prospect of becoming more fearful, as the causes multiply. Constipation of the bowels is the universal immediate or exciting cause, while the fresh fermented bread, fried meats or cakes, sweetmeats, confections, indigestible pastry, and abominable compounds of butter, lard, eggs, sugar, and starch, called puddings, are the predisposing causes. I have known many a robust looking child of two or three years, partake of a hearty supper of griddle-cakes soaked in butter and molasses, with salted ham, or minced-pie, and sometimes the accompaniments of pickles, old cheese, or dried-beef, retire to bed an hour later, and die of convulsions before morning. But this is not the place to write a lecture against "murdering the innocents."

Tepid enemas repeated until the bowels are freely moved, the warm bath, fomentations, and sips of cold water are the remedies.

Children who are predisposed to convulsive disease are more liable to have them developed during the period of dentition; but it is only necessary to keep the bowels regular to obviate all serious consequences.

Convulsive paroxysms often precede the eruptive stage of exanthems — small-pox, scarlatina, measles, and erysipelas. In these cases they are not alarming and need no special treatment.

Cholera Infantum.—This is one of the "summer complaints" that prevail extensively during the "heated term." It is caused by foul air and bad ingesta superadded to constipated bowels. It is known by vomiting, purging, and rapid emaciation.

Pure air is the first essential in the treatment. If the patient is obliged to remain in a malarious basement, stifling attic, or ill-ventilated room, the atmosphere should be freshened as much as possible by opening doors and windows, and making a fan of the door by swinging it rapidly to and fro. A napkin wet with tepid water and frequently changed, should be con-

stantly applied to the abdomen so long as it remains unusually hot. Look well to the quality of the milk which the child takes as food. Thousands of children are annually slaughtered in the cities with fictitious milk. Unless assured that the milk is unadulterated, and derived from cows which are properly fed, the safer way is to disuse it entirely.

Diarrhœa.—Next to cholera infantum, this disease presents the largest bill of mortality during the summer months. The evacuations may be watery, slimy, bilious, or simple fecal. They are seldom very painful, and never attend with fever.

Correct the dietary, keep the child quiet, and give it a warm bath at bed-time.

Dysentery.—This is a very distressing ailment. It consists of an inflammation of the mucous coat of the large intestines, attended with fever of the typhoid form. The discharges are slimy, bloody, and extremely painful. The lower bowel is affected with an agonizing bearing-down sensation, termed *tenesmus.*

Apply cold wet cloths to the abdomen constantly until the temperature becomes normal. Keep the child quiet, resisting inclinations to stool as long as possible. Treat the fever according to its conditions — tepid ablutions if hot, warm applications to the feet if inclined to chilliness, cold wet cloths to the head when hot and painful, &c.

Incontinence of Urine.—Wetting the bed during sleep usually results from constitutional debility of the urinary organs, but may be caused by dietetic errors. The patient should use mostly solid food which requires mastication; drink nothing at meals, and take no slop-food, nor drink beyond actual thirst in the evening. The patient should sleep inclining to one side, instead of on the back.

Marasmus.—This term is applied to a gradual decline, or "wasting away," without obvious local disease. It is usually attributed to some derangement or obstruction of the mesenteric glands; but the true cause is indigestion. Hence attention to the health generally and the digestive organs in particular are

necessary. Scrofulous children are generally the subjects of this ailment. They should have plenty of air, sunshine, and out-door exercise.

Infantile Remittent Fever.—A low form of fever, attended with daily exacerbations and remissions, to which children are liable, has received this appellation. Its various phases are treated of in medical books as distinct fevers. Thus, when the hot stage is prolonged it has been termed *irritative fever;* when delirium or great prostration exist, *typhoid fever;* when the remission is more marked, *intermittent fever;* and when emaciation is considerable, *the hectic of inanition*, etc. It means obstruction and debility. The tepid ablution twice a week; the air-bath daily (rubbing the whole surface gently but briskly with a soft cloth); attention to the dietary, fresh air and sunshine, are the remedial resources. See that the patient does not use impure milk, and avoid all farinaceous preparations which contain yeast, grease or saleratus.

Scarlet fever.—This is one of the most prevalent diseases of childhood; though rarely dangerous it is often violent, and, under ordinary medication, is very fatal, two and three, or more children, often dying in a family during an epidemic or endemic. It occurs in three forms, one of which is termed *malignant*, and is accompanied with ulceration of the throat; another form is accompanied with a swelling of the glands of the neck, often inducing partial blindness and complete deafness, and is termed *anginose;* the other form is termed *scarlatina simplex*, because the eruptive fever is uncomplicated with any affection of the throat or neck. In extreme cases, the eruption peculiar to the skin does not appear, and the patient sinks in a day or two after the first premonition. In the low forms of this disease all reducing measures, as bleeding, leeching, blistering, antimonials, or cathartic drugs, may cause death in a few hours, especially if prescribed at the time the eruption is about to appear on the surface. An ordinary dose of castor oil, at such time, may be as certainly fatal as a pistol ball through the heart, though not quite so rapidly; while in the

milder forms the patient may survive all of these measures, whether beneficial or otherwise.

We have the testimony of eminent physicians of all the existing schools of medicine, that, "water treatment" is as nearly infallible in all forms of scarlatina, as any medication can be in any disease whatever—a specific ; and of the hundreds of non-professional persons who have treated their own and their neighbor's children "hydropathically," guided by such information as they could gather from the Hydropathic Encyclopædia, all have had excellent success—the deaths being less than one in a hundred cases.

The required treatment is exceedingly simple. In the mild or simple form, a tepid enema to free the bowels, and tepid ablution once or twice a day, according to the degree of superficial heat, is all the medication necessary.

The anginose form requires precisely the same treatment, with the addition of cold wet cloths around the neck so long as the swelling is troublesome.

In the malignant form the febrile symptoms are extremely variable, and must be managed accordingly. The coldest applications should be made to the throat, and sips of iced water or bits of ice, taken into the mouth to arrest the local disorganization ; no cold applications should be made to any other part of the surface: if the skin is hot, sponge it with tepid or moderately cool water, being very careful to wipe it immediately dry with soft flannel. Be careful to keep the lower extremities warm, and if the patient is inclined to chilliness, or is extremely restless, while the skin is dark-red or livid, but without preternatural heat, apply fomentations to the abdomen and warm bottles or hot sand bags to the arm-pits.

Because the "cold water cure" has been found efficient in so many cases of mild scarlatina, do not apply it to the *malignant* cases. The *Hygienic System* contemplates the use of water of all temperatures, as each may be most remedial under the ever-changing circumstances of the disease.

Small Pox.—This disease sometimes "attacks" infants, but

more frequently children. It exists in two forms, *mild* and *malignant*, technically termed *distinct* and *confluent*, or *inflammatory* and *typhoid*. In the former variety the pustules are distinct, each with a defined boundary like a boil or abscess; in the latter variety the pustules do not mature well, but spread over the surface and coalesce, so that the surface is raised in livid uneven patches, often terminating in sloughing and the formation of extensive scars or deep pitting.

The patient is more or less indisposed previous to the febrile excitement, which is rather absurdly called the "invasion" of the disease; this stage usually lasts two or three days, when the eruption appears in little elevations or pimples, first on the face, extending thence to the neck, chest, back and upper extremities.

Preceding the eruption the patient is generally affected with violent pains in the back, drowsiness, convulsive paroxysms, and often hiccough and delirium.

The pimples, at first of the size of a pin's head, enlarged to the size of a small pea, having a central depression and a florid or crimson circumference by the third day; soon after, the fluid in the vesicle becomes of yellow-white appearance. The vesicle (*pock*) is usually fully formed and begins to suppurate on the sixth day, attended with burning pain. Dessication commences in ten or twelve days from the first appearance of the eruption, when the matter (*pus*) hardens into a crust of a brownish color; in four or five days the crusts are cast off, leaving reddish-brown spots, scars, or pits.

The pock vesicles sometimes affect the mucous membrane of the wind-pipe and larynx, and if they are numerous near the glottis, endanger death of suffocation. The plan of treatment should contemplate the expulsion of the globules or corpuscles which constitute the contagion of the malady, through the cutaneous emunctory, and the prevention of the disorganization of the skin as much as possible. And this is mainly to be accomplished by keeping the temperature of the surface as nearly to the normal standard as possible. As soon as the

hot stage of the fever is established, the hydropathic wet-sheet pack, or the full bath, warm, tepid or cool, is the proper appliance. If these are not practicable, tepid or cool ablutions, repeated with a frequency to be measured by the degree of heat, should be employed; a prolonged tepid bath from twenty to thirty minutes, or a wet-sheet pack for an hour, will often relieve all the distressing symptoms, and render the patient comparatively comfortable. If these measures are vigorously managed, the patient kept in a shaded or nearly dark room, with abundant ventilation, and of a moderately cool but not chilling temperature, pitting will rarely occur. I have known many cases of infants, children, and adults, in which no spot nor blemish remained to tell of the loathsome malady after a few weeks.

During the premonitory stage the bowels should be kept free, by means of tepid enema if necessary, and all irritating or stimulating ingesta or condiments sedulously avoided.

Varioloid.—This is "modified small-pox," that is to say, the disease (*variola*) occurring after successful vaccination. It is usually of shorter duration and milder form than variola. Tepid ablutions and an abstemious dietary, are the only remedies required.

Vaccination.—Hygienists are not entirely agreed as to the propriety of vaccination as a preventive of small-pox. It is certainly an evil in itself, and whether a greater or lesser evil than variola depends on many circumstances. The operation consists in inserting the vaccine virus, taken from a cow, into the skin. *Inoculation* means, properly, insertion of the matter of small-pox taken from human beings.

I do not believe in the theory of vaccination, nor inoculation, but admit that it may, under many circumstances, be the lesser of two evils. My work "Hand-Book of Hygienic Practice," in the following paragraph expresses the views of the *radical* Hygienists on this subject.

Vaccina.—Vaccinia, Cow-Pock, Kine-Pock, Inoculated Cow-Pox. The small-pox of the cow, called cow-pox, when trans-

mitted to man, will, in most cases, protect him from small-pox. Though medical authors are very fond of boasting of the discovery of Dr. Jenner (whom the profession persecuted), it has long been a controverted question whether his discovery of vaccina, as a preventive of small-pox, has been a blessing or a curse to the world. We are of opinion its evils immeasurably overbalance all the good the world has derived from it. There is something revolting to plain, unsophisticated common sense in the idea of *infecting* the blood of a healthy person with some bane or baleful thing, some venom or virus, to produce immunity from disease; yet it is in character with the whole drug system; and quite recently *syphilization* has been gravely proposed as a preventive of venereal disease. And why not? If persons ought to be poisoned because they are sick, the same reason would poison and infect them to preserve health; and it does. The vaccine virus is usually taken from the human vesicle; but this exposes the inoculated person to a worse infection than that of small-pox. Scrofula and venereal disease are often communicated in this way. Vaccina requires no other treatment than a daily ablution, with due attention to the dietary.

Chicken-Pox.—This is also termed *bastard small-pox* — in medical language, *varicella.* It is an unimportant affection, and is characterized by transparent vesicles, scattered over the body, about the size of peas. Cleanliness is all that need be attended to.

Measles.—There are two varieties of this disease, termed *mild*, or *simple*, and *black*, or *malignant.* They are analogous to the two forms of small-pox, and, like them, depend on the lesser or greater degree of grossness, or impurity of the blood.

Catarrhal symptoms are the usual premonitions of measles, as sneezing, cough, difficulty of breathing, and, in some cases, closely simulating pneumonia. Weak and scrofulous children are liable to various sequelæ, as bronchitis, catarrh, ophthalmia, chronic cough, ear-ache, &c.; children seldom have the dangerous form of this disease, although if it supervene upon teething,

whooping-cough, or any pulmonary affection, it is liable to be prolonged and severe.

The treatment is very simple—tepid ablutions, according to the degree of feverish heat, enemas when the bowels are costive, and a dietary very abstemious and as simple as apple-tea and water-gruel.

Should the eruption suddenly recede from the surface, and the patient become prostrated, delirious, comatose, or excessively restless, the warm-bath and persevering frictions should be employed to reproduce it.

Roseola.—This term is applied to various eruptions of a trifling character, more or less simulating those of the eruptive fevers. It is not contagious as all eruptive fevers are; and requires no other attention than the employment of a tepid ablution daily.

Worms.—Children are liable to be troubled with several species of entozoa, the most common of which are the long round worm (*teres*) which are found in the upper part of the intestinal tube, and the slender white vermicular threads, termed pin worms (*ascarides*), which infest the lower bowel.

Physicians are not agreed whether worms are natural and necessary as scavengers to devour the offal of the alimentary canal, or whether they are simply nuisances. It is certain, however, that a perfectly healthy person has no accumulated offal, and if he had, there are better methods of disposing of it than to carry a colony of devouring loathsome reptiles or miniature serpents.

Vermifuges innumerable are recommended to mothers for *wormy* children, and are often administered on the most vague suspicions of the existence of the animals. I have known a dietary divested of all constipating and offal producing materials to remove all symptoms of worms in due time. Fine flour, old cheese, butter, sugar, and all greasy substances should be excluded. Bread of unbolted grain, ripe fruits, and vegetables simply boiled or baked, constitute a plan of medication that is *death on worms*, and better than all the nostrums in existence.

In a majority of cases where the presence of worms is suspected, the symptoms are owing to indigestible food or over-eating. There is no absolute diagnosis except seeing them in the ejections or dejections.

CHAPTER XIX.

Training of Children.

It is a common remark that "we have no Children in America." I fear it is too true. There seems to be a general and increasing tendency to change infantile into adult humanity without the transitional era of childhood. This is unfortunate in all possible aspects; for a forced development and education, like a hot-house plant, or a night grown mushroom, can only have a frail and short-lived organization.

The primary maxim that should ever be kept in view in the training of children and in the education of youth is, "intensive life can never be extensive." The stimulating viands that are so much resorted to in order to accelerate the development of the bodily structures, ensure multitudinous diseases, and premature death. And the sensational literature that floods the land only intensifies the mental powers, with the results of moral depravity and early intellectual decline. Even our common school system, so admirable in some respects, is in many ways a forcing and ruinous process to both vital and mental energies.

The tendency to vice and crime, to dissipation and dishonesty, so rampant in the land, receives its chief impetus in the habits of life which commence in the cradle, strengthen in childhood, culminate in youth, and which are generally deemed innocent if not salutary.

The wise man never said a wiser sentence than, "Train up a child in the way it should go, and when it is old it will not depart from it." Next to the Golden Rule it may be regarded as the most important sermon on record.

The period of childhood, as already remarked, embraces the transitional era from infancy to youth; from the development of the teeth which achieves independent existence, to the

development of the sexual organs which establishes the social relations.

During this period habits must be formed, character established, and tendencies regulated for life.

There is wisdom enough extant on this subject, but it is scattered, and needs practical association and direction. Thousands of writers teach in books, and pamphlets, and journals, and newspapers, all that need be known to make us wise unto the salvation of our children and the race. But their good words are so far apart, so disconnected, *so unsocial*, as to have little effect on the masses of the people. Let us in the present chapter gather from a few of the most available sources some of these "words fitly spoken," which, like the "apples of gold in pictures of silver," shall present the subject to the mind in such a manner as, if possible, to make an indelible impression.

Says the *Golden Age* in a recent issue, in an article over the signature of John Bouverie Francis:

"A Vexed Question.

"The use of stimulants and the belief that all stimulants are injurious are both almost universal. Which shall be set down as correct—the practice or the preaching? The child is dosed from the hour of its birth with one or other of the various patented preparations whose main property is opium, a powerful destroyer of the nervous system. The quantity to which infants become habituated would produce decided exhilaration in an adult unaccustomed to this form of stimulants. At least fifty per cent. of the children born into the world are literal drunkards before they are three years old, and that peculiar nervous condition is produced which promotes the tendency to resort to stimulants through life, even if it does not make it a necessity. We have powerful preaching on all sides on the grown up drunkard's appetite, and his imbecility, and fierce efforts at coercion to keep him from temptation, but we ignore

the process of forming this appetite and imbecility in infancy, and still regard paregoric mixtures as blessings to mothers and infants.

"The tea and coffee stimulant follows as a matter of course. Everyone knows that these are powerful nervous excitants, and that intermittence brings out the same depression as the omission of the toper's habitual dram. Everyone knows, too, that not a reason can be given in defence of their use that will not apply to any intoxicating drink to the same extent. The only defence is that these cannot be carried to the same ruinous degree. Even this is not strictly true, for it ignores the more subtle progress of the injury from these, and the common long lives of drinkers of the others, and leaves out of view the effect of this incessant plying of the nervous system with these stimulants in creating the need of others. To the moderate drinker, a cup of strong tea or coffee is a more powerful stimulant than a moderate dram. The omission of it at the regular time lets down the nerves even more. We begin with this regular use of stimulants in children, whose nerves are yet weak, and all the while we vigorously preach against spirituous, vinous, and malt drinks. We want savage and partial laws against the vendors of them. We tax spirits two or three hundred per cent., and we abandon all revenue from tea and coffee, because we look upon it as a tax upon common necessities, and this in the face of a tax of forty or fifty per cent. on sugar.

"Then comes the tobacco stimulant. It is safe to say that at least three-fourths of the males begin the use of this powerful stimulant in early youth, and continue it through life. Its use once begun, the nervous system is never free from its influence. The dram drinker may shut off without losing control of himself, but the chewer or smoker must keep his nerves continually strung up with this stimulant. The only thing urged in its favor is that it cannot run to such serious excess. But this is only by a rule which agrees to ignore the origin of the nervous diseases which take off so many, and which, on the one hand,

agrees that no other stimulant shall be held accountable for any of the moral and physical infirmities of the man; and on the other hand, that alcohol shall be held accountable for all the moral and physical infirmities of the drinker. And it magnanimously agrees to be blind to the effect that this stimulant may have in producing that state of the nerves which seems to make alcohol almost a necessity.

"But after putting infancy, and youth, and adult age through all this course of stimulants, and after creating in the larger portion of mankind, the necessity, or at least the habitual use, we set up a crusade against a single form of the abuse—the alcoholic—and proceed to wage war against it by the most unjust laws and the most uncharitable means, and we call it the war of temperance. Nay, we even have the face to call it total abstinence. The good men and women who must have their tea and coffee three times a day; the mothers who dose their babies with opium, and shatter their nervous systems before they leave their cradles; the fathers who, beside their matutinal coffee and evening tea, must smoke their half dozen cigars, or devour their paper of fine cut per day—meet together and organize into associations, and demand of legislatures the most severe penal laws against the sale of spirits, wine, and beer. And this they call the perfect work of temperance; and their own practices, abstinence. If there was the hundredth part of a possibility that they could stop the use of that form of stimulants, doubtless it would be something. But the result even then, would be the substitution of some other form of destroyer.

But is this temperance, indeed? Is it an intelligent warfare against this enemy to mankind? Is it not plain enough that reform must begin earlier, and be more comprehensive? For if we have to allow that all this course of what are called the milder stimulants is according to the natural wants, we shall be reduced to the narrow ground of the mere question of the merits of the different kinds of stimulants for habitual use, in our warfare on the drinkers of beer, wine, and spirits."

I extract the following from one of the daily papers, prefacing it with the remark that, in multitudes of cases in which the drunkard's appetite, which is so incorrigible in old age, are attributable more to wrong feeding, slopping, stuffing, and dosing in infancy, than to all other causes combined.

"WHO, THEN, CAN BE SAVED."

REV. SAMUEL W. BUSH, who has been chaplain of the Binghampton Inebriate Asylum for over eight years, and who has recently resigned, gives the following extraordinary testimony from his experience in that institution:

"How many persons have been permanently reformed can never be accurately known; it is feared but few out of a hundred. This I know, that only three of the eighty-two patients under the first administration have continued in a course of total abstinence; and all these eighty-two belonged to the higher class of society, and were intelligent educated men. Many of these are dead, and died in a manner not pleasant to contemplate. The rest—alas! for them."

So much the more need of commencing with the young, and training them up to hate and shun the intoxicating cup. There is safety only in total abstinence.

An extract from an article written for the *Science of Health*, by Mrs. S. W. DODDS, M.D., of St. Louis, Mo., a graduate of the Hygieo-Therapeutic College, at Florence Hights, N. J., is worthy the attention of every mother:

"HOW WE CLOTHE OUR BABIES.

"Let us glance for a moment at the clothing of the 'infant of the period.' First in order in the dressing of the young infant comes the inevitable bandage or 'roller.' This is commonly made of flannel, wrapped twice around the body, and pinned so tightly that it is absolutely impossible for the child to use properly the abdominal muscles in breathing. For

the first few weeks of a child's life, breathing and crying are almost the only exercises it is able to indulge in, and every garment should be loose enough to admit of free intercostal and abdominal muscular action.

"But as babies' clothes are worn, we have quite the reverse of this. The bandage above referred to so compresses the walls of the abdomen, as to prevent lateral expansion, and whenever the infant cries, the intestines are pushed down into the pelvis, not unfrequently causing infantile hernia; for at this early age the opening to the inguinal canal is often only partially closed, and it requires but little force to cause the bowels to protrude.

"The next piece to be considered is the diaper, and a more uncomfortable article could not well be imagined. It is generally made of cotton flannel, doubled twice, making four thicknesses of this hot material, which is pinned tightly around the pelvis. Add to the above a thin rubber article now in our market, and which is used by some, and see what we have! No wonder so many children have prolapsed bowels, and inflammation generally in that delicate region. Only think of it, mothers! for two long years this heating process is kept up, day and night, without interruption. Suppose you bound the child's head or lungs up in the same way, and for the same length of time, what do you think the consequence would be? You would probably injure those organs for life, if indeed, the child survived the treatment.

"Next in order in our little toilet comes 'baby's skirt,' a little scrap of very fine linen, which, considering its scrimp dimensions, is, for all ends and purposes, a consummate nuisance. Then come the flannel skirts, nicely plaited or gathered on to a cotton band which has also to be pinned around the body, under the arms, so that every time baby is tossed around, the skirt is dragged down over the abdomen, thus adding another binder to the already overbound parts. Last comes the dress, made of some thin material, with or without sleeves, according to the fashion of the times or taste

of the mother, who very rarely knows anything about physiology, and if she did, would be indifferent to its laws rather than not have her child look just like other people's babies. We have then, you see, arms and chest relatively bare, while just below is the petticoat band above referred to, and just below that come the thick hot plaits of flannel over the little pelvis. In this manner the blood is drawn by over-heating the vital parts, and kept there; while it is driven away from the tiny hands and arms, leaving them blue and cold every time the infant is exposed to the air.

"The clothing of a little child, as well as that of a grown person, should, in the first place, be made loose enough to allow of the free use of the muscles. Not only that but every portion of the body should be covered *evenly;* there should be as many thicknesses on the arms and chest as there are on any other part. As respects bandaging of an infant all that is needed is a piece of thin soft muslin, to be worn loosely round the body, for the first week or so, until the umbilicus heals. The undergarments should be made of soft cotton material, instead of flannels, as this is very apt to irritate and chafe the tender skin, and is one great cause of 'gum rash,' which is so annoying to both mother and child. A little waist should be made with long sleeves and high neck, with a deep hem round the bottom, and buttons for fastening the skirt to. This latter should be made of the same material, gored perfectly plain, with a narrow band or hem, around the top, in which to work the button hole.

"In hot weather the above garment, with a gored dress, made with high neck and long sleeves, is all that is required. In cooler weather a flannel suit should be worn between the two, made the same as the outside dress and buttoned down the front. Children as a general thing are kept too warm. After dressing them they are often wrapped in a thick shawl, and placed in the warm bed beside the mother, face and all under cover, with not even a little hole to breathe through. Here it remains for hours, breathing over and over again the air laden

with the exhalations from its own body and that of the mother's. It is also very common to allow the child to sleep in the same clothes it wears in the daytime. This is all wrong. Little folks, as well as big ones, should change all their clothes before going to bed, taking care to hang up for a good airing the ones they take off."

In view of the fearful facts and important admonitions the above writers have presented, what are we to think of the pretended professional and scientific literature extant on the subject. I will quote from but one of the many works of this kind. But let us have its full title:

"Physical Training of Children; or, Advice to Parents. By P. H. CHEVASSE, Fellow of the Royal College of Surgeons of England; Fellow of the Obstetrical Society of London; formerly President of Queen's College Medico-Chirurgical Society, Birmingham; author of 'Advice to a Wife in the Management of her own Health,' etc., etc., etc. With a preliminary Dissertation by F. H. GETCHELL, M. D., Clinical Lecturer on the Diseases of Women and Children at the Jefferson Medical College, Obstetrician to the Catherine Street Dispensary, Fellow of the College of Physicians, and Member of the Pathological Society, Philadelphia, Corresponding Member of the Gynæcological Society of Boston, author of the 'Maternal Management of Infancy,'" etc., etc.

The work is elegantly bound, faultless in typography, systematically arranged, beautifully embellished, and of ponderous dimensions. It ought to be a cyclopædia of wisdom for mothers and nurses. I quote from page 49:

"The wet-nurse ought to take with her dinner a moderate quantity of either sound porter, or of mild (but not old or strong) ale. Tea should be taken at half-past five or six o'clock; supper at nine, which should consist either of a slice or two of cold meat, or of cheese if she prefer it, with half a pint of porter or of mild ale."

Here is the drunkard's drink recommended as a part of two of the daily meals, to poison the milk which the impressible

infant is to take from her breast. But this is not all, for in the preceding page the author advises—

"If she feel faint or low at eleven o'clock, let her have either a tumbler of porter, or of mild fresh ale, with a piece of dry toast soaked in it."

When will the advocates of temperance learn that the *root of the evil* they are combating lies in dietetic alcohol and alcoholic medication?

CHAPTER XX.

Hygiene of Infancy.

There are many little things respecting which mothers and nurses are apt to be careless, or of which they are really ignorant, that greatly affect the health, comfort, and welfare of the little one, and perhaps stamp it for good or evil during all future life. "Just as the twig is bent the tree's inclined." These matters will be considered in the present chapter.

The *Business of Infants.*—Let all who have the care of infantile humanity understand that the business of infants is to grow. To grow normally they must be kept in a healthy condition. They must breathe freely at all times, sleep all they are inclined to, and eat regularly. They must have proper clothing and due exercise; but this last is generally self-regulating.

Never mistake infants for toys or playthings. Never employ them to amuse yourself or entertain company. Never exhibit them for the purpose of reflecting the inherited charms and qualities of which the parents are proud—perhaps justly. In their own good time and manner, if they are well nourished and well rested, they will manifest all the virtues they possess without prompting.

Recollect that character as well as flesh may be made or unmade in infancy. The seeds of virtue or of vice may be sown by a word, a look, a smile, or a blow. "Mar the young sapling, and the gnarled oak will tell of thee for centuries to come."

Infants are as impressible as the plastic clay, and may be easily moulded into vessels of honor or dishonor. If born with a sound organization, and normally trained and educated, they will never show any vicious disposition, except when abused, and then the "ugliness" will be merely the manifestation of

the first law of all vital organisms—self-preservation. Everything that lives must depend on itself or die. This is true not only of every living organism as a whole, but of each individual organ, structure, and tissue. It is true of the brain, the muscles, the nerves, the bones, and even of the white corpuscles of the blood. And it is a very important truth—a truth which, when fully realized, must greatly modify, if not revolutionize, the manner in which civilized nations train and educate their children.

This law of self-preservation is manifested when the gorged infant vomits the food it cannot digest, when it sneezes because of dust or bad air, when it purges because of irritating matter or cathartic medicine in its bowels, and when it collapses into stupor from an overdose of "soothing syrup." The same law is manifested when the infant is "attacked" by mental impressions, angry words or deeds, harsh handling, or harsher looks; and what is called "punishment," whether it be shaking, spanking, cuffing, or whipping, or any other mode of inflicting pain, necessarily puts the infant on its defence. And if it grows up in this warfare against adverse influences, the ill-temper and vengeful passions, thus developed and cultivated, will "grow with its growth and strengthen with its strength."

They will become its "second nature." And now the great lesson deducible from these considerations is, never punish nor correct a child in anger. If you cannot keep your own temper you are not fit to govern a child. *Never punish a child at all;* but correct, instruct, advise, always. Civilization ought to learn a lesson from savage life on this subject. When the Indian child does a naughty thing, the parents, instead of whipping it, take it into the woods by itself and give it a *good talking to.*

Children should never be scolded at all, nor reprimanded in company. If necessary to admonish or correct before folks, do it in mild language, and with gentle manner, rather suggesting the right than condemning the wrong. Nothing tends more to sour the disposition, alienate the affections, and harden the

heart, than wounding the sensibilities of young children by reproaches or criminations in presence of company. Many parents lose all governmental influence, all control of their children in this manner—the more they scold, fret, pound, or whip, the more undutiful the child becomes.

The principle I am advocating ought to be applied to common schools, and the rod abolished for ever. "Strike a man!" said William Ellery Channing, in one of his thrilling addresses against human bondage. With a thousand-fold emphasis might one exclaim against striking an utterly helpless and non-resistant child.

Ventilation.—As breathing is the first necessity of life, a proper supply of pure air is the immediate demand of infantile existence. The room should always be well ventilated, day and night, avoiding, however, a strong current or draught. A door or window, or both, should be more or less open during the night; and if one or both parents sleep in the same bed or same room as the child, the greater need is there of an abundant supply of fresh air. Many more children suffer of coughs and colds because fresh air is excluded from the bed-rooms, than because it is too freely admitted.

Never cover the child's face on any occasion, not even when taking it out-doors for airing or exercise. When the weather is cold and blustering, put plenty of clothing around its head as well as body, but on no account let a veil or any other material come over its mouth and nostrils so as to obstruct free respiration.

Temperature.—Infants are generally kept too near a stove or fireplace, or in too warm an atmosphere. The temperature of the nursery, when warmed by artificial heat, should rarely exceed 65° Fah.; and when lighted with gas, oil, or candles, it should not exceed 60°. During the cold season, the doors or windows of the nursery should be frequently opened for a few minutes, so as to change the atmosphere of the room. This is still more important when the nursery is in an underground apartment, or low basement. Never hold the child with its

back or head to the fire, nor allow it to sleep in such position.

Light.—Darkness, during the day, is as damaging to a young child as it is to a young plant. Both need light and sunshine, or they cannot develop vigorously. The nursery can never be too light. It is fashionable to exclude, not only the rays of the sun, but all strong light, from parlors, nurseries, and even bedrooms, in order to protect the colors, and save the varnish of the furniture. But the economy of property and style is at the expense of health and life.

Of course I do not advocate the exposure of the child's head or face to the direct rays of the sun on a hot day, but the room should be sunshiny. Parasols and veils, so generally employed by girl-babies and young ladies, are pernicious things. They weaken the eyes, enfeeble the skin, predispose to congestion of the brain, and are a prolific source of headache and nervousness. Freckles and tan may be prevented by them, and a more pale and expressionless face secured; but it is at the expense of the rosy cheek, the brilliant skin, the sparkling eye, and the true beauty of womanhood.

A child raised in a dismal dim-lighted building or apartment, will have a dismal disposition, and a dull intellect for life. Its hopefulness will be small, and it will be prone to dwell on the gloomy and melancholy. Its whole mental status will be stolid and selfish, and its whole organization will become cachectic or scrofulous.

Dress.—The prevailing errors in the clothing of infants are an excess for the body, and a deficiency for the limbs. The legs and arms are too lightly covered or entirely exposed, while the chest and abdomen are overloaded with garments.

The cap is among the abominations of fashionable infantile dress. The only object of it is to make the child more "presentable." But the health of the child, and the integrity of its brain, is vastly more important, to itself at least, than being presented to company.

The brain is supplied with a much larger proportion of blood

than any other organ of the body, and is correspondingly more liable to congestion. Hence the propriety of keeping it more exposed than any other part. But it is very common to see an infant's head buried in a cap and its gaudy trimmings, while its neck, and perhaps arms are entirely bare.

Great care should be exercised in adjusting the clothing of infants, so that no part, limb or muscle should be constrained in the least. Every thing should be loose and easy. This is especially important during sleep. The ordinary "belly-band" restrains the play of those muscles of the abdomen, which are employed in respiration, and renders free breathing impossible, and its effect, bad at all times, is still worse during sleep.

It is important that stockings should fit nicely, so as to be sustained without garters, which are always mischievous to young or old; and it is especially important that shoes be broad in the toes, so as not to turn the toes over each other, stunt their growth, and produce corns and bunions. And if parents in dressing their children's feet, will always recollect to cut the toe-nails straight across instead of rounding at the corners, they may save much misery and decrepitude because of in-growing nails.

Dr. Chavasse, before quoted, makes the following pungent, but truthful, remarks on the prevailing style of dressing children:

"The present fashion is absurd. Children are frequently dressed like mountebanks, with feathers, and furbelows, and finery; the boys go bare-legged; the girls are dressed like women, with their stuck-out petticoats, crinolines, and low dresses! Their poor little waists are drawn in tight, so that they can scarcely breathe; their dresses are very low and short; the consequence is, that a great part of the chest is exposed to our variable climate; their legs are bare down to their thin socks, or, if they be clothed they are only covered with 'gossamer drawers,' while their feet are incased in light shoes of paper thickness! Dress! dress! dress! is made with them at a tender age, and, when first impressions are the

strongest, a most important consideration. They are thus rendered vain and frivolous, and are taught to consider dress as 'the one thing needful,' and if they live to be women—which the present fashion is likely frequently to prevent—what are they? Silly, simpering, delicate, lack-a-daisical non-entities—dress being their amusement, their occupation, their conversation, their everything, their thoughts by day, and their dreams by night!"

Sleep.—As already remarked, infants cannot sleep too much. As the assimilation of the food elements in the formation of the tissues, structures, and organs, takes place mainly during sleep, there can be no vigorous growth nor soundness of organization without plenty of sleep. It is, however, very important to form correct habits in this respect, as soon after birth as possible. "Rock me to sleep, mother," is a beautiful sentiment; but it is better to sing in the concert-room than to practice in the nursery. Cradles are among the things which ought to be abolished, and it is a mistake to shake, or swing, or walk, or talk, or sing an infant to sleep. Once commence in this manner, and the baby will demand it of you as long as it is a baby.

When the new-born child has had a lusty squall, inflated its lungs, and established the new working of its vital machinery, it inclines to sleep. Do not hinder it. Let it sleep as long as it can. And when again it appears languid and inclined to sleep, lay it gently on the bed, stop all noise, and remove all disturbing influences. If anything seems to disturb it, wait till it again manifests a disposition to sleep, and then repeat the experiment. By a little perseverance, if need be, the habit of sleeping when it should, will be established, to the great benefit of all parties concerned for a year or two.

Drink.—Nothing but pure water should ever be swallowed by an infant as drink. Indeed, there is no other *natural* beverage in the universe for children or adults, for animals or plants. Healthy, nursing children, who have a sufficient supply of, and proper quantity of mother's milk, do not need

drink. With others, thirst is the rule as to quantity and frequency.

The author of "Physical Training of Children," heretofore mentioned, makes the following wholesome remarks on the subject of the dietary for children:

"Some parents are in the habit of giving their children beer with their dinner, making them live as they live themselves! This practice is truly absurd, and fraught with great danger—not only so, but it is inducing a child to be fond of that which in after-life might be his bane and curse. No good end can be obtained by it; it will not strengthen so young a child; it will, on the contrary, create fever, and will thereby weaken it; it will act injuriously upon his delicate, nervous and vascular systems; and might be a means of producing inflammation either of the brain or of its membranes, and might thus cause water on the brain (a disease to which many children are subject), or it might induce inflammation of the lungs."

It is a sad pity that the learned author could not see, when recommending this kind of *grog-food* for wet-nurses, that it is just as bad for the child (and rather worse) to have the beer run through the blood of the nurse, and taken with her milk, as it is to have it taken directly from the brewery.

Food.—Nature has made no other provision for the sustenance of the infant than its mother's milk. But when accident, or disease, or disinclination, interferes with the natural supply, or vitiates its quality, that food which most resembles it in organic (not chemical) properties, should be substituted. The milk of a healthy wet-nurse is the next best article, and next in order the milk of domestic animals, of which that of the cow is the most available.

I am inclined to the opinion that healthy offspring of healthy mothers should never be fed during eight hours of the night, which are best adapted for sleep. Nor can I imagine many exceptions in the cases of parents and children who are unhealthy; the only exceptions, perhaps, being that in which the breasts are unusually distended with milk, or its quality so

poor that the child is not well-nourished; and even in these cases it would be better, if practicable, to draw off the surplus milk with the breast-pump, and supply the child, in part with other milk by means of the nursing bottle.

As already intimated, few habits are more injurious to the child than allowing it to nurse at irregular times, because it is uneasy, or in pain. A child, so indulged, soon becomes "master of the situation," and eventually acquires a morbid craving like that which torments the dyspeptic adult, and which powerfully predisposes to that disease in after life. Whatever hours are resolved upon for the meals of the child, whether three or more, should be adhered to as regularly as the clock strikes.

Solid Food.—So long as the child thrives, and the supply of milk is plentiful, there is no necessity for any other food than mother's milk. But the appearance of the first four teeth indicate when it may begin the use of other food, provided there is need of it. Farina, rice, oat-meal, corn-meal, rye-meal, and Graham flour, if finely ground, or if not, with the coarser flakes of bran, sifted out, are the best of the farinaceous articles. They should be thoroughly boiled, or made into bread, and mixed with milk in gradually increasing proportions. These may be soon followed by good ripe fruits, and these by a moderate allowance of the more mealy vegetables, of which the baked potato is the best specimen. Always, however, observe simplicity. Only one article should be added to the milk for one meal.

In all the works with which I am acquainted, sugar is recommended as a necessary addition to almost everything the child should be fed with, with the exception of its mother's milk. I am satisfied that this advice is wrong. I have dissuaded from this practice for more than twenty years, and so far as I am enabled to judge from much experience and observation, all children do better without sugar of any kind than with it. And the same may be said of salt.

I cannot too strongly deprecate the employment of fermented bread and cakes, rusks, gingerbread, pound-cake,

dough-nuts, &c., which are so generally fed to nursing children, as well as to those of a larger growth. I know of no article of food that is procurable at a bakery or grocery, that is fit for a child to swallow. Those who would have a proper dietary for the children entrusted to their charge, must purchase the pure materials, and prepare the victuals themselves, or have it made under their personal supervision and direction.

The troublesome diarrhœa which so frequently afflicts nursing and other children, and for which loaf-sugar, burned flour, roasted rice, and boiled milk are usually prescribed by physicians, is attributable to constipating food, more than all other causes combined. I have never known a child seriously troubled with looseness of the bowels, who had never used constipating food nor taken medicines of any kind. I have known a few such children to live and grow from birth to manhood and womanhood without any trouble of the bowels of sufficient consequence to need medication or require any special attention. And the same dietetic habits that were successful in these few cases might be equally successful in all other cases.

Bathing.—Since the advent of Hydropathy a senseless mania has prevailed among certain enthusiasts that water is a remedy of marvellous "virtues," and that bathing, being good *per se*, could hardly be overdone in quantity or *coldness* of temperature; hence the habit of some persons of washing, immersing, or showering, their bodies, when well, once, twice, or thrice a day, with little regard to constitutional conditions or ever-varying circumstances, and with double or treble doses when sick. I have a letter on my desk at this writing just received from an intelligent gentlemen (a public lecturer on scientific subjects) of Liverpool, England, in which he informs me that he "packs" his baby, eight months old, for a "bilious humor," three times a day, and still the baby refuses to get well. I recommended him to feed the child properly, give it a tepid ablution each other day, and leave the rest to nature.

Cleanliness is the real object to be kept in view in bathing

children or adults as a habit; and the frequency of the baths and temperature of the water should be adapted to individual conditions—the feebler the child the higher the temperature, and the less frequent the application. Feeble children should have more air-bathing and less water. They should be rubbed gently over the whole surface of the body with a soft flannel, or the bare hand every day while entirely nude, the room being kept at the proper temperature.

All parts of an infant liable to chafing by its clothing should be sponged with a *cool* wet cloth two or three times a day; and the groin and buttocks, covered with the diaper, should be washed thoroughly with *cold* water and wiped entirely dry after each evacuation of urine or feces. The diaper should also be removed the moment it is soiled, or painful excoriations may ensue.

As a rule a nursing child should be washed all over once a day. If the child is feeble, sponging with tepid water is the preferable mode; if of ordinary vigor, it may better be dipped in a tub of water—temperature about 85°—and wiped dry. In warm weather it may be held in the water from five to ten minutes; but in cold weather one minute is long enough. Soap should be used sparingly, and only on places where the dirt adheres with such tenacity as not to be readily removed without it. Castile soap is the only proper kind for the delicate skin of a baby. Avoid salt, alcohol, vinegar, saleratus, and all other irritants. They should be as carefully excluded from the skin as from the stomach.

Never bathe a child soon after a meal. The best time is when the stomach is most empty. Do not let it take food less than half an hour after bathing. Vigorous children should be bathed on first awaking in the morning, provided the room is of proper temperature. Weakly and restless children had better be bathed at bed-time and immediately put to rest and sleep.

Exercise.—The best general rule is *letaloneativeness*. I am of the opinion that all the contrivances in the world for exercising the nursing infant, have done more harm than good. Left to itself

on a smooth surface out of the way of all burning or bruising instrumentalities, it will exercise all it can profitably, and just in the manner that it should. It will first *demonstrate* with its little legs and feet, and lively arms and fingers; then roll its growing body about promiscuously; next creep on all-fours, and next essay the perpendicular, just as nature intended it should, and finally walk, run, hop, skip, and jump, "in the way it should go." It is true that some of the fashionable exercising apparatus in vogue—the elastic baby-jumper, for example—may be so nicely adjusted as to do no particular harm, and possibly enable the child to get on its feet sooner than it would if only exercised the natural way. But I fear that such physical development is as objectionable as precocious mentality.

Breathing.—Some children require to be educated into the manner of breathing correctly. Some are born so abnormally that they incline to breathe through the mouth instead of through the nostrils; and others acquire this habit in consequence of repeated colds, overloaded stomach, and other causes.

All normal breathing is done through the nose. The mouth is for speaking, singing, eating, and drinking. When the respiratory system is used only for breathing purposes, the mouth should always be kept shut, unless under violent exercise. The mouth should also be kept shut during sleep, with all persons young or old.

The habit of breathing through the mouth instead of the nose, tends to weaken the whole respiratory apparatus, diminish the capacity of the lungs, and when commenced in early infancy, to distort the jaws and deform the teeth. Many of the tribes of American Indians (as explained by the eminent artist, the late Mr. Colton), are particular never to allow a child to sleep for a moment with its mouth open, and unsymmetrical teeth are unknown among them. Whenever a child is inclined to open its mouth during sleep its watchful mother or nurse presses its lips together, holds them closed, and perseveres in the corrective process until the abnormal habit is overcome and breathing the natural way established.

Bodily Positions.—An infant may be distorted in its muscular system, or obstructed and enfeebled in its internal viscera, by wrong bodily positions. With children, as well as youth and adults, erectitude of the body is the rule. All bending should be at the joints, not of the chest upon the abdomen, nor of the head upon the chest. High pillows, which are bad for adults, are worse for children; and worst for infants. The infant's bed should never be so soft nor its pillow so hard as to compress the vessels of the neck. The sleeping infant naturally assumes the position on the back, and its head should be raised from the mattress a trifle, but never enongh to bring the chin down nearly to the breast, nor, indeed, to produce any appreciable flexure of the neck.

Never try to make a child sit uprightly without supporting the back until it inclines to, lest the strain upon the slender muscles of the spinal column cause a curvature in after-life; nor urge it to stand or walk until it shows a disposition to, lest it become bow-legged or distorted in some manner. The only strictly safe rule to follow in this respect is, to let children sit, stand, walk, when they want to and can.

"*Baby-Talk.*"—Never indulge in what is commonly known as baby-talk, nor let any one else address your child in that manner. Every word or syllable that is spoken to a child, however young, should be distinctly articulated and correctly pronounced, nor should the intonations be any different from those which are proper when speaking to an adult. Children are imitative creatures. They readily imitate your manner of mumbling, gibbering, and distorting language, and, perhaps, as they grow up, will "better the instruction." You should no more pervert or sophisticate the language you address to an infant a year old or less, than you should poison or adulterate the food for its stomach. Language and music are the clothing of our thoughts and feelings, and our speech and song should correctly represent them.

A child that is always addressed in proper tone and language, other things being equal, may speak with more propriety and

grammatical accuracy at three or four years of age, than another child can at eight or ten, whose "teachers of elocution" have been baby-talkers. There is no shadow of reason for this silly custom. "O reform it altogether."

Bedding.—Feather beds, which are unwholesome for all persons, are especially pernicious for young children. They enfeeble the skin, relax the muscles, and tend to the production of rickets and spinal curvature. Both mattresses and pillows should be of hair, sponge, or some similar firm and elastic material. A mixture of hair and corn husks makes an excellent and cheap material for beds.

I repeat the caution already given, that pillows for children should be very small and thin. Some authors condemn them entirely; and their absence is certainly a great improvement on the presence of the kind generally employed.

Confections. — Cakes, candies, and sweetmeats are "slow poisons," when pure, and worse when adulterated. Cakes are an admixture of flour, sugar, and grease, and sometimes of saleratus or yeast in addition, and sweetmeats are concentrated preparations of fruit and sugar. Both are indigestible, and tend to dyspepsia, and all manner of stomach and bowel ailments. Candies, and nearly all kinds of sugar confectionary, are mixed or colored with poisonous drugs, among which are clay, plaster of Paris, gypsum, lead, copper, mercury, chromic acid, and arsenic. All of these work a double mischief by injuring the health of the child, and destroying its relish for wholesome and natural food. The plainest food possible, with no seasonings of any kind, is the only rule on this subject, consistent with normal appetences in future life, and the highest degree of physical and mental development.

Playthings.—Toys and playthings of every kind should be such as cannot be swallowed or put up the nose, will not cut or prick, and cannot poison if taken into the mouth. Most children have a way of testing the qualities of almost every thing placed in their hands by the sense of taste, and the more abnormal their appetites and dyspeptic their stomachs, the more

prone they are to put every thing that comes in their way into their mouths. Many children are born with such inheritances of depraved instincts that they swallow lumps of dirt, offal, and whatever else they can force through the gullet. Of course such children should be closely watched, or kept where these things are not obtainable.

Colored toys for children are liable to the same objections as colored candies. The child may put them in its mouth and become poisoned with the coloring matter. Green colors are especially objectionable on account of containing arsenic. For the same reason green wall paper, green window curtains, and green dresses are dangerous. Nearly all contain arsenite of copper, which is diffused through the room in the form of impalpable dust. Keep lucifer matches out of the child's way.

Unpainted wooden blocks, or bricks, are among the very best playthings for children. They are always harmless, and children never tire of them. Wooden toys which are unpainted and harmless can be found in sufficient variety at any toy-shop, so that dangerous and poisonous playthings are wholly inexcusable.

Evacuations.—Mothers and nurses are usually and justly very attentive to the appearances of the fecal and urinary discharges; but much mischief is done in trying their abnormal qualities with drug medicines. The character of all excretions must necessarily correspond with the health of the general system, and the quality of the blood from which they are excreted. Hence, instead of medicating them we should purify the blood and restore the general health—not by cathartics, acids, alkalies, calomel, opium, &c., but by diet, air, bathing, temperature, &c.

If the urine is very red or dark it indicates foul blood; if excessive in quantity a torpid skin, or if deficient, torpidity of the kidneys; but no drugging can correct these morbid conditions. The fecal discharges are, when normal, of a light yellowish color, and semi-solid consistence. If clay-colored or dark, they indicate inaction of the liver; if very dark, obstruc

tion of the lungs and imperfect respiration ; if watery, a torpid skin ; if hard and dry, constipation ; and if the food passes unchanged, indigestion, with deficient saliva and gastric juice. And for these various derangements thousands of children are annually drugged out of existence, or into a condition of chronic invalidism. Attend well to the hygiene, and these ailments will be overcome in due time.

Teething.—The period of dentition varies much, the first teeth sometimes appearing before the infant is three months old, and in other cases not until three years of age. The infant usually, however, begins to "cut its teeth" (cut its gums with its teeth) at seven months.

The first or temporary set of teeth consists of twenty, and is usually developed in pairs. The regular order is : 1. The lower incisors (front) or cutting teeth. 2. The upper incisors. 3. The upper two lateral incisors. 4. The lower two lateral incisors. 5. First grinders in the lower jaw. 6. First grinders in the upper jaw. 7. Lower pointed corner or canine teeth. 8. Upper corner teeth. 9. Second grinders in the lower jaw. 10. Second grinders in the upper jaw. This order of the teeth is, however, liable to many variations. The usual period of dentition for the first set of teeth is about two years and a half.

As already stated, healthy children have little trouble in "cutting their teeth," and no serious sickness of any kind. With others great distress may attend the development of the teeth, especially the grinders, as they press against the unyielding and inflamed gums, frequently occasioning diarrhœa or convulsions.

To guard against these consequences, see that, as the teeth are pressing on the gums sufficiently to occasion noticeable irritation, with restlessness, feverishness, startings during sleep, dreuling at the mouth, &c., the bowels are kept entirely free, and the skin open by warm ablutions or the warm bath.

It is the constipated condition of the bowels, and the febrile state of the whole system that causes the rigidity and tenderness of the gums.

When the gums are very tense and painful, most physicians recommend lancing them. No harm is liable to result if the operation is skilfully performed; but I believe it is never the better way. If the bowels and skin are properly attended to, the inflammatory tenderness will soon disappear. And much of this can be anticipated and prevented by putting a teaspoonful of cold water into the child's mouth several times a day, as soon as the least swelling and redness of the gums are perceived.

Some nurses give teething children very hard substances, as coral or ivory, to bite during teething. This is very objectionable. The proper articles are India-rubber, bridle-leather, the nurse's finger, or its own little thumb, or things of similar consistence. Some authors recommend a crust of bread, used as a gum-stick. This is wrong for two reasons: 1. The child might get a piece of it into its throat and become choked. 2. Food should never be taken into the mouth except at meal times.

Weaning.—Vigorous children may be taken from the breast without notice or previous preparation, and at once, after they have learned to masticate solid food; but it is better to wean weakly children gradually: they should be nursed less and less, and fed more and more, for a few days, and then removed from the breast altogether. Those children that have been trained to eat their regular meals during the day, and sleep during the night, are weaned with very little trouble.

With others it is better to send them away for a few days, the nurse-maid feeding them once during the night with a bottle of new milk, kept warm in the bed. If the weather is very warm the milk should be boiled to prevent souring.

Some authors recommend applying some bitter powder to the breast to produce aversion in the child, when it manifests unwillingness to give up its accustomed place and manner of feeding. Better let the child cry it out. It seems to me doing violence to its whole moral nature to do aught that could occasion the slightest feeling of disgust towards its mother, or its maternal fount.

Amusements.—These of every kind should be as much out of doors as the weather will permit. The difference between open air and house air is as much in favor of a child as of an adult. Indeed, it is much more important, for the dust, gases, and other impurities of indoor apartments which would not be noticed by an adult might seriously damage the more susceptible child. As soon as the little thing is able to toddle, its proper carpet in fair weather is the green grass, or a blanket spread on the *clean dirt*—nothing is purer than the uncontaminated earth. There is no objection to the baby-carriage, as a means of exercise and amusement; but in cities careless servant girls are very apt to jounce the infant over the gutters and rough places in a harsh and injurious manner, which may damage it for life. Every nurse should be thoroughly cautioned in this matter. Besides riding in its carriage, or in the nurse's arms, and the use of the playthings already mentioned, no special amusements are called for until the period of infancy ends with the completion of the first set of teeth.

CHAPTER XXI.

Raising Children by Hand.

The essential difficulty of raising a child by hand consists in artificial food, which can never be a substitute for natural food. The practical point, therefore, is to have it as nearly natural as possible. We must always keep in mind the law that no being but its mother can produce perfect food for any living organism that derives its first nourishment from the breast; no woman can supply another woman's child with as perfect food as she could, provided she was in all respects in a normal condition; all artificial feeding is, therefore, the lesser of two evils.

It happens, unfortunately, that doctors disagree as to the proper manner of feeding children who are obliged to be raised by hand, as they do on nearly all other subjects; and in all the books I am acquainted with, almost every thing recommended to be eaten is vitiated or adulterated with salt, sugar, yeast, or poisoned with wine, or is a conglomeration of all of these things with fine flour and grease, and perhaps eggs. A majority of all the preparations of "infant food" sold in the shops or prescribed by medical men, is composed of two or more of these articles, while not one of them is fit for the stomach of a child.

So far as milk is concerned, there is little to choose between that of a healthy wet-nurse and that of a healthy cow; nor is there much to choose if both are unhealthy, as the chance for the child to be damaged or killed is about equal in either case. But, whichever is selected to supply foreign milk for the baby, she should be as nearly as possible in the same period of lactation that the mother would have been if she had nursed her own child; that is, if baby is one week or one month old, the wet-

nurse or cow that furnishes it milk should have been delivered one week or one month previously.

Boiling the milk renders it constipating, as does the addition of loaf or lump sugar or salt. Brown sugar is usually dirty and swarming with the sugar insect which irritates the bowels and causes many foul humors.

Condensed Milk (not the "concentrated," or "solidified," which is sweetened with loaf sugar), though not so good as fresh milk, has the advantage of being unadulterated. When, therefore, the quality of the fresh milk is suspicious, the safer way is to use the condensed article. This is about the consistence of thick cream, and will bear diluting with three parts of water to one of the condensed milk.

As condensed milk has itself some tendency to induce constipation, the addition of loaf sugar would be more pernicious than when added to fresh milk. But, instead of sugar to aggravate its constipating effects, I would recommend the juices of mild ripe fruits to counteract them. Mild flavored apples, if entirely ripe, may be baked and the pulp mixed with the milk. Peas, peaches and many other fruits, can be used in the same manner.

The child should never take anything into its mouth cold or hot. The temperature of the milk fed to it should be 90° to 95°.

It is impossible to feed a child properly with a spoon. The milk it *eats* should be masticated, and for this purpose it must be taken very slowly—almost drop by drop, from the nursing-bottle or some similar contrivance. This should be washed with scalding water every day, and emptied every time it is used. The sponges and rubber-nipples should be kept in water when not in use.

Many attempts have been made to lay down rules for the quantity of milk a child should be allowed to take from the nursing-bottle. I do not believe the proper quantity admits of weighing or measurement. The correct rule is, I think, to let the child have its meals at regular times and then take all it is inclined to, never urging it to "hold on" or "let go."

No child can thrive on the milk of a cow that is fed on slops, or the garbage of a city. Her food should be entirely solid, or such only as is well-masticated, as grass, clover, hay, straw, and similar forage. Most writers caution those who raise children by hand, to procure the milk only of those dealers in whom they have confidence. But those in whom we have the most confidence sometimes prove the most unconscionable knaves. The better way is to know for ourselves, what we are feeding babies.

Of the solid foods (mostly farinaceous and starchy preparations) which are recommended in medical books as "artificial food" for hand-raised infants, the list is almost as long and almost as unhygienic, as the "bill of fare" at a first-class hotel or restaurant. But as those adults at the hotel or restaurant do best who partake only of a few and the simplest dishes, so I think the babies who are raised on half a dozen kinds of simple food will grow up better than those who are stuffed and gorged with a hundred varieties.

Among the articles and preparations in common use are, arrow-root, sago, tapioca, lentil powder, fine flour, fermented bread, rusks, rice-powder, semolina, barley, sweet acorns, &c.

The articles mentioned in a preceding chapter are vastly better—wheatmeal, cornmeal, ryemeal oatmeal, &c., with a due allowance of fruits and vegetables as the child grows older. The unbolted meal of the cereals if well ground, makes the best possible addition to milk. It may be made into thin mush, or into bread (but without yeast or risings of any kind), and mixed with the milk, in gradually increasing proportions as the child grows older and its teeth appear.

For recipes and directions for cooking hygienically all kinds of foods, see our "HYGEIAN HOME COOK BOOK."

CHAPTER XXII.

Accidents and Emergencies.

An immense amount of suffering would be prevented, and thousands of lives saved annually, if those who have the care of children always knew what to do instantly in cases of casualties.

Clothes on Fire.—Children are often marred for life by this accident. Instead of running after water, or trying to take the sufferer in its burning clothes to some place where water may be had, smother the flames at once. All you have to do is to cover over the burning part of the clothing so as to exclude the air, and the fire is ended. For this purpose throw around the child the first thing that is available—garment of any kind, blanket, shawl, sheet, carpet, or overcoat. Most young girls, and many women, whose clothing is a-flame, run out to the open air, which is just the worst thing they could do. They should fall flat on the floor, and thereby prevent the the blaze from running up the clothes to the head. By rolling on the floor they in many cases instantly extinguish the fire without assistance, and in all the cases lessen the injury. If some covering is not at hand, the attendant should throw the patient prostrate on the floor, and then seek the necessary extinguisher.

Burns and Scalds.—Children are peculiarly liable to be burned or scalded as soon as they begin to run about, for if there is any one place on the premises more dangerous than another, the little *walkist* is sure to find it ; and as the nursery is often in close proximity to the kitchen stove, if not all around it, the chances to suffer of fire, hot irons, or boiling water, are many and imminent.

A slight burning is not always to be depreciated, as it may

each the little adventurer the useful and very important lesson of the relation of heat to its vital structures; but if any considerable portion of the skin is disorganized the consequences will be serious and may be fatal.

As there are all degrees of injury from burns and scalds, all kinds of constitutions which are the subject of them, as the great majority of burned and scalded persons recover, with or without the aid of the remedies employed, or in spite of them, and as the medicaments and specifics which experience attests, as useful or infallible, are as numerous as are the contents of the apothecary shop, there would seem to be no need of any trouble in managing them. But the trouble comes from the multiplicity of the remedies; and as there is no general agreement among medical authors, nor among non-medical practitioners, as to what drug remedies are useful and what injurious, the safe "medium between extremes" is to let them all alone.

We have already seen that water of the proper temperature, is all the "medicine" required for inflammation or fever, and a burn or scald is nothing more nor less than a local inflammation, attended, when severe, with a constitutional febrile disturbance.

But there are some circumstances peculiar to the local disease when caused by extreme heat suddenly applied; and these require special attention.

The first application should be the coldest water attainable; to be continued until all smarting ceases. If the skin becomes blistered the contained fluid should be evacuated by puncturing the vesicles or sacs. After this, the part should be covered with a thick coating of fine flour. Over this dry cotton or lint should be applied, and if the part again becomes hot, cool wet cloths may be applied over the whole, and extending some distance beyond. When the skin is abraded so that the atmospheric air, some portion of which may come in contact with the delicate tissues beneath the cuticle, causes painful irritation, the temperature of the room should be raised to 80° or 85°, careful attention being paid to ventilation.

When the true skin is destroyed it is not reproduced in the process of healing; but the areolar tissue which forms over the ulcerated surface, by contracting as cicatrization advances, is apt to occasion deformity unless precautions are taken. Burns and scalds about the neck or joints require especially attention when they are healing, and the part should be so adjusted mechanically as to prevent warping or distortion. If the fingers or toes are badly burned, they should be kept apart while healing, or adhesions may take place.

Many domestic appliances have a reputation for alleviating pain and promoting the healing process. Their value depends on preserving an equal temperature in the part, and preventing the access of atmospheric air. Among the best of these, which are always attainable at any time, are some soft ointment, as simple cerate, tallow, cotton wool, or lint. In deep-seated burns, which are very painful when dressed, and should be exposed to the air as little as possible, there is no more convenient application, after the pain has been abated, than a dressing of fresh lard or simple cerate, over which is laid a covering of finely carded cotton wool.

Burned and scalded surfaces need not be dressed oftener than once in two or three days, and then should be washed with the greatest gentleness, or the little granulations will be broken up and cause ugly scars. Much mischief is often done by "meddlesome medication." Neither soap, vinegar, spirits, nor any other irritant should ever be applied to the raw surface.

Children sometimes get their throats badly scalded by undertaking to drink from the spout of a teapot or teakettle. These scalds are of course very dangerous. The only remedy is the coldest water internally and externally.

An English author (Chavasse) asserts that one thousand children are annually burned to death in England by their *cotton* pinafores taking fire. This fact suggests one of three things. Either substitute some less combustible material for a pinafore, or, after washing and drying it, soak it in a solution

of tungstate of soda and render it fire-proof, or leave it off altogether.

Bruises and Sprains.—Children suffer much, and generally quite unnecessarily, of injuries of all sorts and degrees, from the most trivial contusion to the severest sprain. All the remedies ever discovered, invented, or applied, do not compare with simple water in remedial efficacy. All that is required for the best possible treatment of these injuries is, to adapt the temperature of the water to the circumstances of each individual case. The coldest water attainable, or the warmest that the skin can bear without blistering, or any degree of temperature between, may be the best for a given case. Nothing is easier than to ascertain by a little experimentation, what degree of temperature is best for the case in hand, for it happens fortunately that the temperature which is most agreeable is also most remedial. The general rule is, the more heat and inflammation there is in the injured part, the colder should be the application, and *vice versa.* In some very painful cases of sprains and bruises, hot and cold applications alternately are preferable.

Wounds.—Incised wounds, or "cuts," are made with a sharp-edged instrument. They bleed freely, but heal readily. When the blood is of a bright florid color, and is discharged in jets, it comes from a wounded artery of considerable diameter, and may require torsion or ligation, for which operation a surgeon should be called. If the blood flows in a continuous stream, and is of a dark red color, it is from a wounded vein. If mixed or intermediate in color, and oozing out very slowly, it comes from the fine capillary vessels, no large artery or vein being wounded or severed.

Cold applications generally restrain the bleeding; if not, compresses of lint, or fine sponge, should be applied and secured with a bandage or roller.

When a large blood vessel is wounded, endangering life from hemorrhage, the bleeding vessel should be compressed *above* (towards the heart) the injured place, thus preventing loss of

blood until the surgeon can be obtained. The thumb or finger may be employed to compress the artery, or the knot of a handkerchief may be applied over the pulsating vessel. A tourniquet, which has many times saved life, has been extemporized by a large handkerchief, or strip of cloth, the knot, made as above, placed over the vessel, the cloth placed round the limb, and twisted with a stick passed through the loop, until the bleeding was arrested.

In extensive cuts or incisions the edges of the wound should always be brought together and retained by means of adhesive plaster, and sutures if necessary. If the parts are nicely adjusted, and the inflammation regulated by simple water dressings, the wound will heal by what surgeons call the "first intention," that is without suppuration, leaving little or no scar.

Contused wounds are injuries made by blunt instruments, as fragments of wood, or metal, stones, clubs, &c. They bleed very little, or not at all. If severe there is more or less blood *extravasated* into the areolar tissue under the skin, causing livid discoloration. Slight contused wounds heal by the process of absorption, but when severe, abscess and ulceration, followed by granulation and cicatrization, are the remedial processes. They require water dressing, as explained in the preceding paragraph.

Punctured wounds are made by sharp pointed but not cutting instruments, as dirks, bayonets, forks, nails, &c. When deep they are very painful, and the danger consists in the injury to some vital organ, or the penetration of some large blood-vessel. Very little bleeding occurs unless a large vessel is wounded.

If the heart, brain, lungs, or abdominal viscera are not seriously damaged, punctured wounds heal readily. If a nerve is partially severed, tetanus or locked-jaw is liable to occur; wounds in the palms of the hands, soles of the feet, and in the dense tissues around the joints, are especially liable to be followed by these spasmodic affections.

Water dressings locally, and the prolonged warm or tepid

bath, in case the body becomes feverish, or spasms occur, are the remedies.

Stings of Insects.—The coldest water that can be procured is the remedy. Scrofulous or cachectic children are sometimes severely and dangerously affected by the stings of the wasp, bee, hornet, or even the bites of spiders, mosquitoes, or bed-bugs. The wound, or virus, excites erysipelatous inflammation, which may progress to extensive ulceration. Death has been the result in some cases. There is no virtue in the hundred-and-one specifics which appear annually in the newspapers for these ailments, and for the viruses of the mad dog and rattlesnake.

Concussion.—Blows, falls, and shocks of all kinds, if sufficiently violent, produce this condition. The patient is semi-paralyzed, the respiration very feeble, the pulse frequent, tremulous, and intermitting; but consciousness is seldom entirely lost, the patient having some use of the organs of the special senses, and can generally cry or speak, although with difficulty. The symptoms appear instantly after the infliction of the injury. In many cases nausea and vomiting occur, and sometimes urination and defecation take place involuntarily.

Perfect quiet, and plenty of fresh air constitute the whole remedial plan. It is the custom of some physicians to bleed and of others to stimulate in cases of concussion. Both are pernicious.

Compression.—In the condition to which this term is applied there is either extravasation of blood in the brain, because of some shock or injury, or an accumulation of blood or serum, in either case inducing unconsciousness. The respiration is laborious and noisy, the pulse *slow* and irregular, all the excretory organs torpid, and the patient comatose. The eyelids are closed, and the pupil of the eye dilated and insensible to the rays of light. The bladder and bowels are so paralyzed that the catheter and enemas are necessary to relieve them, if the case is prolonged.

Have the head raised on one thick or two thin pillows; remove all tight clothing, especially about the neck; apply cold

wet cloths to the head, and make warm applications to the feet.

Once or twice a day sponge the whole surface with moderately warm water, rubbing gently afterwards with dry cloths. To relieve the bladder. apply alternate warm and cold applications, and move the bowels with enemas of tepid water.

Blisters and other irritants applied to the scalp "to promote absorption" are worse than useless.

Choking.—Pieces of hard bread, meat, fruit, and other substances sometimes lodge in the upper part of the gullet (pharynx) and, by pressing against the glottis (entrance to the windpipe) endanger immediate suffocation. The obstructing material can generally be pushed down with the finger, or with any elastic rod or tube which may be accessible. A small piece of sponge, tied to a whalebone, or a folded rag tied over the end of a flexible and blunt-pointed rod will answer all purposes. But in nearly all cases the article can readily be removed; the handle of a dessert spoon can generally be passed behind it, and, as the child retches, lift up upward and forward so as to dislodge it. In one case, when the child was struggling violently, in consequence of one half of an apple being lodged in the throat, I steadied the apple with the tines of a table fork in front, and the spoon handle behind, so that it was easily taken out. These instruments are always at hand, and I see no reason why they should not always be successful, except in the cases of very hard substances.

When coins, pins, needles, or other metallic substances become fastened in the throat or gullet, they may be removed by wire loops; but their management requires the hand of the skilful surgeon.

Tickling the throat will often cause the little patient to retch, and perhaps vomit, and throw out the offending material.

Hard substances have been removed by the following process, which induces a powerful *expiratory* effect on the respiratory muscles, and indirectly on the gullet:—Place the patient

beneath your knees *sidewise*, and with your knees compress the belly, at the same time giving a smart blow on its back with your flat hand.

Obstructions of the Nostril.—Children sometimes push a pea, bean, plum-stone, or other substance, so far up the nostril that it remains permanently; in some cases held more firmly by the consequent swelling. It may be removed with a pair of forceps, director, or bent probe, but in the absence of surgical instruments, I have succeeded in the following manner, which almost any mother or nurse can imitate:—Take a common knitting-needle and flatten one end very thin, curving it slightly. This can be readily passed behind and above the obstructing substance, and, by gentle and steady pressure against it while pulling the instrument downward, the nostril will be cleared of its presence.

Obstructions in the Ear.—Peas, beans, beads, cherry-stones, &c., sometimes are pushed into the external cavity of the ear, in the multitudinous pranks of the child. Boxing the uppermost ear smartly a few times, while the affected one is rendered undermost by turning the head to one side, is the popular and usually successful method of administering "corrective punishment." Syringing the ear with warm water will in most cases remove the obstruction.

When an earwig or other insect gets into the ear, the cavity is usually filled with olive oil, which washes the thing out without difficulty. But for the consolation of those who have not olive oil at hand, it may be well to state that simple water is just as effectual.

Obstructions in the Stomach.—Should a child swallow a small piece of broken glass, a fragment of stone, or metal, or a pin, let the thing entirely alone. If undisturbed by emetics or cathartics it may pass through the whole alimentary canal without serious damage, while all attempts to remove it endanger its becoming embedded in the structures and causing fatal ulceration.

Coins generally pass through the alimentary canal without

trouble, and are discharged with the fecal matters. Never give purgatives with the view of hurrying them along.

Foreign Matters in the Eyes.—Among the substances which frequently lodge in the eyelids, or in the delicate coats of the eyeball, are cinders, fragments of glass, or coal, particles of sand, quicklime, &c. They should be carefully and promptly removed, or the organ of sight may be irretrievably injured or totally destroyed.

These substances are soon washed out by the tears, unless they become fixed under the upper eyelid, or impacted into the eyeball. To remove these the upper eyelids should be everted, when the foreign body can easily be seen, and removed with a blunt probe or any similar instrument. A fine linen or silk handkerchief folded over the large end of a darning-needle, or the head of a large pin, will readily remove ordinary particles of grit, dust, steel, cinders, &c. An ordinary quill writing pen answers a good purpose.

When quicklime, which is a very caustic substance, has lodged in the eye, a weak solution of vinegar, to neutralize the alkali, is useful, if it can be had instantly. If not, trust to tepid water to wash it away, and then keep *down* the inflammation by the constant application of cool wet cloths, keeping the eye, meanwhile, shaded against any strong light.

If sulphuric, nitric, or any strong acid gets in the eye, a weak solution of soda, saleratus, potash, or any alkali, is useful, provided it can be promptly applied; otherwise treat the case as above.

Nose-bleeding.—Very young children are seldom troubled with bleeding from the nose unless from injuries, except when inheriting that morbid condition or cachexia known in medical parlance as the "hemorrhagic diathesis." Slight bleeding may be checked at once by pressing the nose firmly between the finger and thumb. Cold water applied to the nose, forehead, and nape of the neck, is generally effectual. A still more prompt remedy may be found in lumps of ice applied to the nape of the neck, and bits of ice placed in the mouth.

Fainting.—Syncope does not often affect young children; yet it may happen in infancy from fright or any strong mental emotion. Treat the child as you should an adult. Place it on its back with its head on a level with its body, and leave it to the efforts of nature.

Suffocation. — When suffocation results from irrespirable gases or mephitic vapors of any kind, the remedy is fresh air. Fan the patient vigorously, and if entirely breathless, treat it as for asphyxia, which see.

Drowning.—The directions given under the head of asphyxia apply here. Do not use the bellows, nor the warm bath.

Abrasions.—For a multitude of slight wounds, injuries, and skin affections, not admitting of classification, as abrasions, scratches, cracks, fissures, chilblains, and slight cuts, there is no better application than gummed paper. Gum arabic, dissolved in water, or the mucilage of the shops, spread on thin paper, answers all purposes. It readily adheres to the part, protects it from dust and atmospheric influences, and can be renewed without trouble at any moment.

CHAPTER XXIII.

Poisons and Antidotes.

In all cases of poisoning the first thing to be done is to cause the ejection of the poison by vomiting. Nothing is more prompt, safe, and effectual, than tickling the throat with a feather or the finger, and causing the patient to drink as much warm water as possible. When the poison admits of an antidote, as in the cases of acids and alkalies, this should be administered if it can be obtained promptly. When neither of these methods of treatment is available, the effects of the poison must be treated in the same manner as similar symptoms attending the same diseases from other causes. Keeping these principles in mind, it is only necessary to state very briefly the symptoms and management of such cases as are common to the nursery and childhood. Nearly all of these may be resolved into the following classes:

1. Acids for which alkalies are the antidotes.
2. Alkalies for which acids are the antidotes.
3. Acrids for which mucilages are the antidotes.
4. Irritants for which albuminous matters are the antidotes.
5. Narcotics for which air and temperature are the antidotes.
6. Specifics which occasion peculiar effects, and which require special medication.
7. Venoms and viruses which require to be organically decomposed.

Acid Poisons.—The principal of these are sulphuric (oil of vitriol), nitric (aqua fortis), hydrochloric, acetic, oxalic, tartaric and citric.

The symptoms are a burning sensation, an acrid taste, excoriation of the mouth and throat, and excruciating pain in

the stomach. When the quantity swallowed is large, the extremities soon become clammy and cold, and death ensues.

The remedies or antidotes are alkalies, as soda, potash, magnesia, lime, &c., &c. Baking soda, saleratus, carbonate of magnesia, and chalk, are salts in which these alkalies are in excess, and are hence antidotal. Any one of them that can be first obtained should be administered in a half-teaspoonful dose, while the patient is made to swallow as much water (warm preferable) as possible, and the throat irritated with the finger, so as to occasion speedy and thorough vomiting.

But it often happens that neither of these alkalies is at hand, and then no time should be lost in waiting for them, but the water-emetic treatment should be promptly and vigorously prosecuted without them. And whether they are immediately obtainable or not, the warm water, or water of any temperature that can be soonest procured should be given to the full capacity of the patient to swallow.

Alkaline Poisons.—The strong alkalies, like the strong acids, seem to burn the living structures like fire. They occasion intense inflammation followed by rapid disorganization. The principal ones are quick-lime, potash, soda, pearlash, and ammonia. The symptoms are similar to those produced by the strong acids, the chief difference being the *acrid caustic taste.* The treatment is in all respects the same as for acid poisoning, reversing the antidotes. The most available acids are vinegar, lemon-juice, citric and tartaric acids. Either may be given freely if largely diluted with water,—one ounce to a quart.

Acrid Poisons. — Nearly all the pungent articles of the *materia medica* come under this head, as pepper, rhus, cowhage, nettles, croton oil, turpentine, alcohol, bryonia, gamboge, colocynth, cubebs, balsam of copaiba, colchicum, and a hundred others.

The symptoms are a pungent taste, heat and dryness of the mouth and throat, extending in greater or lesser degree to the stomach, and, when the dose is large, excessive vomiting, and

violent purging, with great pain in the stomach and bowels. The patient is often semi-delirious, and in some cases completely intoxicated.

Warm water emetics should be employed until the contents of the stomach are ejected, and then mucilages, as gum arabic, slippery elm tea, marsh mallows, &c., freely administered.

Irritant Poisons.—This class comprehends nearly all the potent mineral drugs of the materia medicas and the toxicologies. The most important articles are, arsenic, corrosive sublimate, nitre, tartar emetic, calomel, red precipitate, blue vitriol, white vitriol, verdigris, copperas, phosphorous, bromine, chlorine, iodine, and various salts of gold, silver, lead, and other metals.

The symptoms differ but little from those of acrid poisons, except that their effects, as a rule, are less prompt but more permanent. They occasion less disturbance in the mouth and throat, and more in the abdominal viscera, especially the liver and bowels. They also depress the energies of the whole organic nervous system more decidedly than any other class of poisons except the narcotics.

After cleansing the system of their presence as much as possible, as in the preceding cases, the patient should take freely of albuminous articles, as white of eggs, new milk, wheaten flour mixed with water, &c.

Narcotic Poisons.—Under this head may be named chloroform, tobacco, belladonna, stramonium, prussic acid, gelseminum, poke-root, aconite, strychnine, morphine, opium, conium, cicuta, foxglove, or digitalis, black cohosh, lobelia, ergot, &c.

They occasion the symptoms of dizziness, stupor, delirium, diminished sensibility, loss of voluntary muscular motion, and in large doses complete unconsciousness or anesthesia.

These cases are to be treated precisely as apoplexy, compression of the brain, &c.,—cold applications to the head, warmth to the feet, abundant ventilation, a cool but not very cold atmosphere, &c.

Specific Poisons.—Nitrate of silver (lunar caustic), some of the preparations of mercury, arsenious acid, cantharides (Spanish

flies), and a few other articles which are but little used constitute this class. No special medication is available in the nursery except the warm bath daily, and moderate employment of albuminous foods, and strict attention to the general health.

Venoms and Viruses.—When the patient is poisoned by the insertion of any matter of infection or contagion under the skin, whether from a rabid animal, rattlesnake, spider, or putrescent carcass, the only prudential and proper treatment is to destroy the matter at once by disorganizing the part. If this is promptly and effectually done, absorption will be prevented, and no serious consequences follow. Any strong caustic, as aqua-fortis, aqua ammonia, white vitriol, chloride of zinc, &c., immediately applied to the wounded part so as to penetrate as far as the poison has been inserted will answer; so will potash, quicklime, or whatever else is capable of disorganizing living matter. The application of a red hot iron, or cutting out the wounded part would answer all purposes if practicable. Unfortunately it generally happens that none of these things are available soon enough to prevent the poison from being carried into the circulation. The poison may be sucked from the wound without danger, as its effect when taken into the mouth is very different from the consequences of its insertion under the skin. Indeed, the virus of the rattlesnake has been administered as a medicine, in doses that, injected into the tissues, would cause the death of a dozen persons, with no more effect than follows ordinary doses of morphine or alcohol.

If one of the extremities is bitten, a ligature placed around it, between the wound and the heart, and very near the wounded part, will retard the passage of the poison along the veins and absorbents until it can be removed or destroyed.

THE END.

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