

## THE MOTHER.



THE motherly instinct is without doubt the ruling passion in the heart of the true woman. The sexual nature of woman finds expression in this channel when her life is a normal one, rather than in the grosser forms of sexual activity. In modern times there seems to be a tendency to the obliteration of the instinct which makes motherhood desirable and regards it with respect; but every true woman will recognize the demoralizing nature of this unhallowed influence, and will lift her voice in solemn protest against it. In no sphere does woman so well display her Eden-born graces of character so excellently as when fulfilling her duties in nurturing and training for usefulness the plastic minds and forms which have been intrusted to her care. We behold with admiration the canvass of a Raphael or a Michael Angelo; we stand with speechless wonderment before the recovered marble of a Phidias or a Praxiteles; we are almost ready to bend the knee in adoration of the lofty genius which gave birth to these marvelous works of art which have immortalized their creators; but which of all of these can for a moment compare with the work in-

trusted to the mother, the task of molding a mind, of modeling a character, not for time only, but for eternity?

Let the purity and dignity of motherhood be magnified. Let woman be taught that in the performance of her Heaven-intrusted task she is fulfilling a mission so lofty and so sacred that none other can ever approach to it. We do not say that woman should never aspire to any calling outside the province of the domestic circle; but we do most emphatically denounce as false and in the highest degree perverting in its tendency, the notion that the mother's mission is a lowly one, unsuited to the capabilities of a brilliant intellect. Such teaching is in the highest degree mischievous. Any mother may find within the scope of her own family circle ample opportunity for the full employment of the noblest endowments of mind and soul which have ever been bestowed upon a human being.

*The Prospective Mother.*—The woman who for the first time recognizes the fact that she will in the natural course of events in a few months become a mother, naturally finds her mind occupied with new thoughts and curious questions on a variety of themes which may never have interested her before. If she possesses the true mother's instincts she will earnestly inquire how her own habits of life, her thoughts and actions, may affect the well-being of her developing child. Possibly she may never have heard of the marvelous influence of heredity in molding not only the form but the character of the unborn; but instinct teaches her that her own conditions in some



way affect those of her child, and that for a period she must think, act, and live for another besides herself. One of the most powerful means of impressing indelibly upon the mind the necessity for care and proper training, mental and moral, as well as physical, during the period of pregnancy and lactation, is a presentation of the principles and facts of

### HEREDITY.

We have not space here to enter into the details of this somewhat intricate department of biology, and can only call attention to a few of its leading features which are of special practical value in this connection.

"Like father like son," is a homely adage, the correctness of which is rarely questioned; and "like mother like daughter" would be equally true. A careful study of the subject of heredity has established as a scientific fact the principle that sons as a rule most resemble the father, and daughters the mother, although there are often observed marked exceptions to the rule. The degree to which this hereditary tendency exists, and how it may be utilized to the improvement of the race is a question of interest which we may profitably consider. Unfortunately, the question of "pedigree" receives very little attention so far as human beings are concerned. If a man is about to expend a thousand dollars for a fine horse, he inquires with great care into the ancestry of the animal. The owner must be able to show a record of lineal and unmixed descent from parents

of pure stock, or its value will be greatly depreciated in the eyes of the purchaser.

Stock raisers appreciate in the highest degree the fact that "blood" is a thing of market value, and not to be ignored in the slightest degree. In matters which relate to the welfare of their own race, however, eternal as well as temporal, human beings seem to ignore the principles which they so readily recognize in lower species.

A young man seeking a wife, or a young woman considering the eligibility of a young man to become her husband, asks no questions about pedigree. At what age did your father or mother, or grandfather or grandmother die, or of what disease? is a question rarely if ever asked as having any bearing on the subject of marriage. Family tendencies to scrofula, consumption, insanity, epilepsy, or any one of numerous other lines of physical degeneracy, to say nothing of vicious moral and mental tendencies, are never taken into consideration.

*Race Deterioration.*—In consequence of this neglect of one of the primary conditions of healthy parentage, the race is daily deteriorating in spite of the efforts of sanitarians and health teachers. Sanitary laws respecting the care of cities and of individuals may be ever so thorough and complete, and may be enforced with the most scrupulous rigor, yet the race will continue to degenerate so long as this matter of heredity is neglected; for "blood will tell," whether good or bad, and the great preponderance of "bad blood" is the fatal element at work undermining the constitution of the race and destined



ultimately to destroy it, if some means is not taken to prevent its baneful influence.

We are fully aware that this view of the prospects of the race is a very unpopular one; but considerable study of the subject has convinced us that the conclusion we have drawn is the only correct one. Defects of body and mind, as well as of morals, are growing yearly more abundant. Two persons possessing these defects unite in marriage, and their defects are many times increased in intensity in their children.

A quaint writer in speaking on the subject of heredity and indiscriminate marriage, utters the truth in the following very forcible words:—

“By our too much facility in this kind, in giving way for all to marry that will, too much liberty and indulgence in tolerating all sorts, there is a vast confusion of breed and diseases, no family secure, no man almost free from some grievous infirmity or other, when no choice is had, but still the eldest must marry; . . . or, if rich, be they fools or dizzards, lame or maimed, unable, intemperate, dissolute, exhaust through riot, as it is said, *jure hereditatis sapere jubentur*, they must be wise and able by inheritance; it comes to pass that our generation is corrupt, we have many weak persons, both in body and mind, many feral diseases raging amongst us, crazed families, *parentes peremptores*; our fathers bad, and we are like to be worse.”\*

The stock-breeder modifies the form and mental and nervous qualities of his animals almost at will.

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\* Burton's Anatomy of Melancholy.

He increases or lessens length of body or legs, and increases or decreases any particular feature of muscular development. Under his manipulations, the common race of horses yields in obedience to his will, the carriage horse or cart horse, the racer or the roadster, each with special qualities and characteristics which enable him to excel in a particular direction.

*Interesting Illustrations.*—Every breeder knows that not only good traits but disease and vicious tendencies are transmissible. Broken wind, spavin, and numerous other diseases are well-known to be inherited in horses, as also defects, even when accidentally produced. It is asserted that when several generations of horses have been marked with a red-hot iron in the same spot, the colts sometimes acquire the same marking.

The well-known variety of sheep known as the *ancon* originated in a male lamb born of an ordinary sheep, but possessing the peculiarity of a long body, short legs, and crooked fore-legs. These qualities being desirable as they rendered the animal unable to leap fences with the usual facility, the same qualities were produced in others by breeding from the original, and thus a distinct breed of sheep has been produced.

It is undoubtedly in a similar manner that the flies of some of the windy islands of the Pacific Ocean have lost their wings, without which they are much better fitted to meet the gales to which they are almost constantly exposed.

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transmitted the same to his children and thence to his grandchildren.

Acquired habits are often transmitted. This is noticed in a marked degree in the various breeds of dogs. The shepherd dog takes naturally to his task; and the pointer needs scarcely any training to make him proficient in his particular line. That the disposition to use the left hand runs in families is a familiar fact. A curious example is given in which the habit of crossing the legs in a peculiar manner during sleep was transmitted through two generations.

A remarkable example of heredity appears in the case of the Lambert family. More than a century and a half ago a boy of fourteen appeared before the Royal Society of England, possessing a peculiarity which attached to him the appellation of the "Porcupine Man," consisting of a thick covering of horny scales or bristles which gave to his integument the appearance of that of a hedgehog with its quills trimmed to about an inch in length. This peculiarity, accidentally acquired through some abnormality of the developmental process, was transmitted to his sons and grandsons. The narrator remarks concerning this curious freak of nature, "It appears, therefore, past all doubt, that a race of people may be propagated by this man having such rugged coats or coverings as himself; and if this should ever happen, and the accidental original be forgotten, it is not improbable they might be deemed a different species of mankind."

Dr. Brown-Sequard, an eminent French physiologist, has succeeded in inducing epilepsy in guinea-pigs,

and has observed that even when thus artificially induced, the disease is transmitted to the young of the diseased animals.

It has also been observed that the conditions resulting from overwork or ill usage of an animal are readily transmitted to the young.

Mr. Francis Galton, who has probably made the most careful study of the hereditary influences which produce men of genius, tells us that nearly all men of great talent, jurists, statesmen, commanders, artists, scientists, poets, and clergymen, have had parents of marked ability. Of the two parents, the father has the precedence in the proportion of seven to three; but this is no greater difference in favor of the male than would naturally result from the superior advantages afforded men for the development of genius.

One curious fact is that eminent divines seem to inherit their ability from their mothers much more frequently than their fathers, the proportion being nearly three to one in favor of mothers, from which he concludes that mothers transmit piety to their children in a larger measure than fathers.

If true, this certainly speaks well for the piety of women; but we question the correctness of the conclusion, for we are by no means certain that the qualities which contribute the most largely to the eminence of distinguished divines are not other than those which constitute piety. Learning, eloquence, and other traits which make men famous in other callings are more often the chief factors.

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the Caucasian races, is almost equally marked when the children of the ignorant and the cultivated classes of the white race are compared. In both cases the influence of heredity is apparent.

That moral as well as mental qualities are transmitted from parent to child is also evident from the observation of what are known as the criminal classes, in whom the hereditary tendency to crime is so apparent that in England, institutions have been organized to provide for the care of the children of criminals in the hope that by correct early training something may be done toward reclaiming them.

The habit or vice of the parent becomes in the child an almost irresistible tendency. This is apparent in the children of drunkards, thieves, libertines, and prostitutes, and we do not doubt that further investigation and careful study of the subject will show that the tobacco, opium, chloral, and other similar habits, and possibly also the excessive use by parents of tea and coffee and of stimulating condiments, stamp the progeny with vicious tendencies which either lead directly to the formation of similar habits or worse ones, or establish diseased conditions which sooner or later develop into serious or even fatal maladies.

No better illustration of the fact of the inheritance of a tendency to vice could be asked than is afforded by the notorious Juke family of New York. From five unchaste sisters have sprung a family of 1200 persons, nearly all of whom, at least of those living, are the occupants of jails, work-houses, poor-houses, or houses of bad repute. Nearly half are known to

be contaminated with the foulest of all diseases to which human beings are subject.

The hereditary tendency to vice and crime is one which deserves more attention than it now receives from our law-makers and administrators as well as from parents. It is really impossible to justly estimate the degree of an individual's guilt without knowing something of his hereditary tendencies. We do not propose that persons with hereditary tendencies to theft and other crimes shall be excused on that account, but rather that they should be punished in a different manner from other criminals.

The Chinese are certainly a hundred years ahead of us in their administration of justice, at least in this particular. In that country, careful inquiry is made in each case as to the family history of the prisoner and the possible hereditary tendencies which he may have received from his parents.

Very recently an example of hereditary influence in a bad direction has been exhibited before the whole country in the person of the assassin, Guiteau. According to the testimony given in this case, the prisoner's mother was wholly unreconciled to her condition during pregnancy previous to his birth, and resorted to every possible means of producing an abortion by means of drugs. He came into the world an "unwelcome child," his body weakened by the violence done it, his nervous system depraved by the excited and turbulent condition of his mother during his development, and his mind stamped with the reckless disregard for human life felt by his mother in her unsuccessful attempts to destroy her helpless, unborn



babe. Are there not thousands of just such unbalanced and erratic minds whose bias toward evil has been obtained in the same manner? What would be the children of such a father as Guiteau? Are there not thousands of just such little ones growing up in the heart of every large city at this very moment? Is it any marvel that our prisons and insane asylums are full to overflowing?

The poets Coleridge, father and son, illustrate this same principle. The father was an opium-eater, and as a result of yielding to the fascination of the habit, he was reduced to such a state that he said of himself that not only in reference to his habit but in all the relations of life his will was utterly powerless. His son inherited his father's propensities and weakness of will. His favorite poison was alcohol, however, instead of opium. The following is his brother's description of him: "A certain infirmity of will had already shown itself. His sensibility was intense, and he had not wherewithal to control it. He could not open a letter without trembling. He shrank from mental pain; he was beyond measure impatient of constraint. . . . He yielded, *as it were unconsciously*, to slight temptations,—slight in themselves, and slight to him, *as if swayed by a mechanical impulse apart from his own volition*. It looked like an organic defect, a congenital imperfection."

He well understood his condition, as is evidenced by the following reference to himself which occurs in one of his works:—

"Oh! woful impotence of weak resolve,  
Recorded rashly to the writer's shame,

Days pass away, and time's large orbs revolve,  
And every day beholds me still the same,  
Till oft-neglected purpose loses aim,  
And hope becomes a flat, unheeded lie."

The senior Coleridge, as well as the younger, was well aware of his weakness, and kept himself constantly under the care of an attendant to prevent him from yielding to his propensities.

One of the most talented of modern essayists\* has looked deeply into this subject and thus coined his thoughts into words:—

"It is very singular, that we recognize all the bodily defects that unfit a man for military service, and all the intellectual ones that limit his range of thought; but always talk at him as though all his moral powers were perfect. . . . Some persons talk about the human will as if it stood on a high lookout, with plenty of light, and elbow-room reaching to the horizon. Doctors are constantly noticing how it is tied up and darkened by inferior organization, by disease, and all sorts of crowding interferences; until they get to look upon Hottentots and Indians,—and a good many of their own race, too,—as a kind of self-conscious blood-clocks, with very limited power of self-determination; and they find it as hard to hold a child accountable in any moral point of view for inherited bad temper, or tendency to drunkenness, as they would to blame him for inheriting gout or asthma."

Notwithstanding these facts, we must still maintain that man is morally responsible for his acts, al-

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\* Holmes.



though in somewhat less degree than has been in generations past supposed. The light thrown upon the subject of heredity by modern scientific researches explains the divine mandate, "The sins of the fathers shall be visited upon the children unto the third and fourth generations."

All of these facts are of practical interest as showing the mother how she may determine something of the character to expect in her children, and knowing beforehand what their deficiencies and morbid tendencies may be, will be prepared to meet them in such a manner as to correct them so far as may be by proper training during the period when the mind is plastic and impressible. But there is a still more valuable lesson to be learned from heredity, one which ought to be indelibly fixed in the mind of every woman who may possibly become a mother; viz., the fact that during the period of gestation, or pregnancy, the mental and bodily states of the mother affect those of the embryonic being to whom she is destined in due time to give birth. This position has been disputed, but the accumulated evidences have become too strong to allow of room for doubt. The following are a few illustrations out of many which we might cite:—

According to Carpenter, in his large and excellent work on physiology, a state of anxiety long maintained during pregnancy has a tendency to produce idiocy in the children. He cites in support of this idea the fact that out of ninety-two births which occurred in the district of London, France, within a few months after the siege of 1793, during which a terri-

ble cannonading was kept up for days and the arsenal was blown up, sixteen died at birth, thirty-three died before the expiration of the first year, eight were idiots and died before they were five years of age, two were found at birth to have numerous fractures of the limbs, making nearly two-thirds of the entire number lost to the world through the unhappy mental influence of a continual state of alarm on the part of the mother.

James I. was a monarch noted for his cowardice. Emotions of fear would sometimes seize upon him so that he would shudder at the mere sight of a sword. This was not a trait of his immediate ancestors, and can only be accounted for by the fact that his mother, Queen Mary, of Scotland, was terrorized by the assassination in her presence of David Rizzio, shortly before the birth of James.

Napoleon was a character in striking contrast with the monarch just mentioned. Before his birth his mother was accustomed to warlike scenes,\* accompanying her husband on military expeditions, and sharing with him the scenes of civil war; not in a state of alarm, but of firmness and bravery.

Another author† quotes the case of a woman who was during her pregnancies always afflicted with a mania for theft, the result of which was that she transmitted the propensity to all her children.

Numerous other cases might be cited, did space permit; but sufficient has been said to show clearly

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\* Life of Napoleon Bonaparte, by Sir Walter Scott.

† M. Lucas.



that ante-natal influence upon the mother is a powerful factor in determining the character of offspring.

Influences operating upon the father, and perhaps also upon the mother at the time of impregnation, have also an important bearing on the character of offspring. This fact was recognized by the ancients, who attributed to influences of this character greater importance than the facts will support.

Combe gives an account of a case reported by a physician of the Isle of Man as follows: "A man's first child was of sound mind; afterwards he had a fall from his horse, by which his head was much injured. His next two children proved to be both idiots. After this he was trepanned, and had other children, and they turned out to be of sound mind."

One more fact should be mentioned in this connection. It has been observed that the young of animals who are immature in years or development are small and dwarfed, and incapable of perfect development. Lambs, goats, calves, and colts born of young parents, remain undeveloped, weak, lymphatic, and incapable of performing their full functions. The same is true of the stag. It has been noticed that the young of such animals do not reach maturity so soon as those born of older parents.

It is asserted by Aristotle that in those cities of Greece where it was the custom for young people to marry early, before complete maturity, the children were of small stature and puny.

An eminent French authority\* observed the same thing in his native country where the fear of con-

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\* Montesquieu.

scription induced many young persons to marry before the proper age. He states that although the unions were fruitful, the children were small, wretched, and unhealthy. Another authority, M. Lucas, states that the same thing occurred in France in 1812 and 1813.

If the race is ever to be redeemed from the present state of physical degeneracy into which it has fallen, it must be by means of attention to the laws of heredity. By this means only can diseased tendencies be successfully combated. Without the aid of this powerful redeeming agency, all other means will be unavailing. The keeping alive of weak and physically depraved individuals, thus allowing them to marry and impress their own weakness and morbid tendencies upon the race, directly contributes to the furtherance of race deterioration rather than the reverse. This is one of the most interesting and important of the numerous problems to be grappled with by students of social science. How can the laws of heredity be applied to the human species in such a manner as to make them of practical value to the race? Men ought to be born into the world with a bias toward good instead of evil, "weighted" toward health instead of toward disease. We do not look for the dawn of the Utopian day when such will be the case, in the present generation at least; but every mother ought to study and ponder the subject with the greatest care and thoughtfulness, and seek so far as possible to make a practical application of these principles in the rearing of her children.



## GESTATION, OR PREGNANCY.

*Signs of Pregnancy.*—The cessation of the menses is usually the first indication that conception has taken place and that the period of gestation has begun. As remarked in a previous portion of the work, however, some women seem to have certain symptoms indicative of the occurrence of conception, such as slight faintness, or some nervous symptom peculiar to the individual. These cases must be regarded, however, as quite exceptional. When the menstrual function is interrupted without the occurrence of anything to which it may be fairly attributed, as taking cold, or some serious general or local disease, a married woman who has been exposed to the liability of conception may consider that she has good grounds for suspecting that she has become pregnant. It should be borne in mind, however, that pregnancy sometimes occurs without interrupting the menstrual function, at least during the first months. Cases are also on record in which pregnancy has occurred without the menstrual function ever having made its appearance, and after the change of life had occurred, the menstrual discharge having been absent for months.

“*Morning Sickness*,” is a symptom which makes its appearance very early in the period of pregnancy, usually in the second month, and often in the first week, continuing six or eight weeks. There is nausea and sometimes vomiting, the symptom usually occurring just after rising in the morning, whence its

name. This form of vomiting is due to sympathetic influences, and while generally not so serious but that it may be easily controlled by the simple means which will be hereafter described, sometimes becomes so violent and uncontrollable as to endanger not only the life of the fœtus but of the mother. Many women do not suffer at all with this symptom.

One of the most constant and important signs of pregnancy is the change which takes place in the breasts. At the middle or end of the second month the mammary glands begin to enlarge, become firmer to the touch and somewhat sensitive, and other marked changes occur in the nipple and adjacent tissue. Its color becomes darker, and the dark ring about it, known as the *areola*, acquires a considerable increase in color, becomes somewhat enlarged, and presents on its surface many little tubercles, formed by the enlargement of the peculiar glands which are found in this locality, each of which is in fact a miniature breast in its structure, and hence ready to take on the same development as the gland itself when influenced by the same exciting cause.

In many cases, dark spots appear at this period upon the face and hands or other parts of the body, which closely resemble liver spots, but are distinguished from them by the fact that they speedily disappear after childbirth.

By the end of the second month the womb has acquired a considerable increase in size, in consequence of which it settles down in the pelvis, giving to the abdomen an unnatural flatness characteristic of this condition.



Between the third and fourth months the foetus reaches a degree of development sufficient to enable an acute observer to hear distinctly the beating of the heart. Observations respecting the foetal heart-beat and the means for detecting it have been made at page 98, and need not be repeated here. This is a certain sign of pregnancy.

"*Quickening*" is the term applied to the first movements of the child which are observed by the mother. The term originated in an age of ignorance when it was supposed that at the time motion was first felt, a change took place in the development of the child by which it acquired individual life, which it did not possess prior to that time. The fallacy of this theory has been already shown in this work. It is necessary only to say that motions are made by the foetus at a very early period; but as the uterus does not become sufficiently enlarged to bring its walls in contact with the abdominal walls until the fourth or fifth month, the mother does not observe them until this period.

The movements are described as resembling the fluttering of a bird, or strong pulsation. They may be easily observed by others besides the mother by placing the hand upon the abdomen for a few moments. If they do not occur promptly, a slight tap of the fingers will occasion them, or dipping the hand in cold water before placing it upon the abdomen. Sometimes these movements are imitated either purposely or as the result of disease; when this is the case, the fact may be discovered by observing that the means just given for exciting them does not succeed.

Sometimes women who greatly desire children mistake the movements of the intestines occasioned by flatus or indigestion for those of a foetus. These imitations of foetal movements are so rare, however, that this may be considered an almost positive symptom of pregnancy.

By the time the foetal movements begin to be felt, the uterus has increased in size to such a degree that there is a very considerable increase in size of the abdomen. This symptom must not be relied upon, however, as constituting a reliable sign of pregnancy, as there are so many causes which occasion abdominal enlargements, particularly dropsy and flatulence of the bowels, both of which conditions have often been mistaken for pregnancy. The enlargement of pregnancy is somewhat peculiar, however, being greater at the center than the sides, as a rule, and frequently appearing greatest on the right side. Ovarian tumors have been mistaken for pregnancy, and the reverse.

A case of the latter kind came under our observation some time ago. We were called to see a lady who was said to have a tumor, the enlargement of the abdomen having been pronounced by several physicians to be an ovarian or uterine tumor which should be removed. A subscription had been raised by the friends to pay the expenses of the patient to a large city hospital for the purpose of having the operation performed. She expected to start for her destination in a day or two. On examination we found the usual appearances of pregnancy, although the woman denied having had any of the usual symptoms, and of course advised a postponement of the intended jour-



ney. A few days later, other medical advice was called, and the physicians present were so completely deceived that they resorted to the use of a "sound," as the result of which the woman was in a few hours obliged to send for a physician who delivered her of a nearly developed child.

Several cases have occurred in which operations have been begun for what was supposed to be uterine or ovarian tumors. In nearly all of these cases the surgeon has been led astray by the representations of the patient. It is important that women should become thoroughly instructed on this subject, so as to be able to give an intelligent account of their symptoms and conditions, and to observe more accurately, thus themselves avoiding deception.

Near the termination of pregnancy the uterus becomes so greatly enlarged that it presses seriously upon the stomach and occasions a return of the nausea and vomiting.

A few weeks before the conclusion of gestation, the turgid condition of the blood-vessels of the vagina gives rise to leucorrhœa.

At the very termination of pregnancy, or just previous to the final act of parturition, the uterus again settles down in the pelvis and rapidly undergoes preparation for the process by which its contents are expelled.

During the period of gestation the uterus increases to more than twenty times its natural size, and becomes capable of holding more than five hundred times its normal quantity.

The size of the embryo and foetus at different

stages, and of the child at birth, have been fully described elsewhere in this work. (See page 100.)

### HYGIENE OF PREGNANCY.

During the period of gestation the mother has the responsibility of another life besides her own; and it should be known and understood by every mother that by her own acts during this time not only her own health is affected, but the physical, mental, and even moral well-being of her child.

Sufficient reference has already been made to the way in which hereditary and ante-natal influences may affect the unborn infant, and we shall not recapitulate here, but wish to point out some of the ways in which a mother may so relate herself to the laws of nature as to secure to her offspring the highest possible realization of the ideal worshiped by the ancient Greeks, "A sound mind in a sound body."

The condition of pregnancy is in many respects a critical one. This is true of this period in all species of animals, but especially with human females, owing to certain peculiarities of structure to which we have elsewhere called attention. The necessity for special care at this time has prompted nearly all nations to surround their females, when pregnant, with special safe-guards from violence and injuries. The laws of ancient nations, as well as the usages, even at the present day, of barbarous tribes, make apparent the fact that the state of pregnancy has always been regarded by the race as one to be held sacred from invasion.



We will first call attention to measures of regimen and treatment which conduce to the comfort and safety of the mother during gestation and while passing through the process of childbirth, by the aid of which the pains of parturition and the perils of maternity may be avoided. Thousands of women look forward to the termination of pregnancy with constant dread and most dismal forebodings; and thousands of others adopt every possible device to avoid pregnancy through fear of the pains and dangers which are commonly attributed to these physiological processes. We hope to offer in these pages suggestions which will afford to such wives assurance of safety and so great a mitigation of suffering as will lead them to choose the slight inconveniences of normal pregnancy and physiological childbirth rather than the dismal comfort of a childless old age and the increased liability to disease which is likely to result from a childless life.

*Parturition without Pain.*—For ages woman-kind has submitted, not always uncomplainingly, it is true, but with evident hopelessness of any redemption, to the pains and perils of maternity, fully believing that their sufferings were the result of the curse pronounced upon womankind in consequence of the transgression of their first mother, Eve. Doubtless woman must endure some burdens and sufferings to the end of time in obedience to the divine mandate, "In sorrow thou shalt bring forth children;" but we are prepared to show that the greater part of woman's sufferings in the performance of this the highest of all physical functions is the result, not of

the curse of Jehovah, but of Dame Fashion. The perverting and deteriorating influences of civilization and fashion have entailed upon woman an amount of sorrow and suffering many fold greater than that which legitimately results from the penalty of the first woman's transgression.

We are aware that some people whose moral instincts are perverted, will exclaim in holy horror against such a doctrine as this, and will even go so far as to object to the employment of any means for the purpose of obviating or mitigating the pains and dangers of childbirth on the ground that in so doing we are attempting to thwart the purposes of the Almighty.

There have been prominent divines who have placed themselves in the attitude of objectors on this ground; but we shall not be deterred by the absurd arguments of these over-scrupulous persons from presenting to our readers every known means by which the discomforts and sufferings attendant upon the function of maternity may be mitigated, and so far as possible altogether obviated.

*Diet.*—The kind of food eaten has an important bearing on the ease and safety with which the functions of childbirth may be performed, as well as the proper development of the child. All rich and indigestible food should be avoided. The diet should be simple, and should consist largely of fruits and grains. Copious water-drinking, especially taking a glass or two of hot water an hour or two before each meal, is a most excellent means of guarding against disease of the kidneys,—one of the most serious of all the



complications of pregnancy, as well as being an excellent remedy for indigestion, particularly acid dyspepsia, so very common among pregnant women. Oatmeal, cracked wheat, graham flour, and the whole-grain preparations generally, are to be recommended as the very best means of preventing constipation, —one of the most common morbid conditions of the pregnant state. These foods also afford to the system of the mother the very best kind of nourishment, providing an adequate supply of salts for the bones, nitrogenous material for the nerves and muscles, and fat-producing elements to give the roundness and plumpness of form which is characteristic of this condition. The practice of many mothers of living upon tidbits of various kinds during this period cannot be too strongly condemned. Good, wholesome food is needed, in abundance and sufficient variety, not only to sustain the mother, but to afford a proper amount of nourishment of the right kind to the child. Fine-flour bread, rich sauces and pastry, confectionery, and everything of like character should be scrupulously avoided. Not more than three meals a day should be taken, and these should be at regular hours.

The too free use of animal food during the period of gestation is also to be condemned. The stimulating character of such diet has an injurious influence upon the nervous system, and, in addition, its highly nitrogenous character increases the liability to acute inflammation of the kidneys, a most serious affection which is liable to make its appearance near the termination of pregnancy.

The use of tea and coffee is justly condemned by the wise physician, especially during pregnancy, as the abdominal nervous irritability present at this time is very easily increased by any morbid agent of a stimulating character. They are also serious impediments to digestion, and their use increases the tendency to "morning sickness," one of the unpleasant and sometimes most serious complications of pregnancy.

The same is to be said still more emphatically of beer, ale, wine, and spirituous liquors of ever description. The idea that the woman needs something of a stimulating character to "keep her up," is a serious error. Nothing of this sort can be used without positive detriment to both mother and child. The only thing needed to sustain the prospective mother and prepare her for the ordeal before her, is good healthy food, and obedience to all the laws of health. Stimulants give an appearance of strength without the reality. A person feels stronger under their influence, while in reality weaker by the loss of nerve power which unnatural excitement always involves. A long-continued course of stimulation, even of a mild character, will so weaken the nervous system as to utterly unfit a woman to endure the ordeal of the final termination of pregnancy, and a vast amount of mischief has been occasioned in this way. The only time when stimulants of any sort are needed is at the very close of pregnancy, when the system is taxed to the uttermost by the efforts of childbirth; and if the system has been previously accustomed to the use of stimulants, it will not respond at the moment when



an extraordinary exhibition of nerve power is demanded, the vital resources having been previously exhausted by the habitual demands made upon them. This matter we consider of very great importance, and worthy of the most serious consideration on the part of mothers.

What has been said of the common alcoholic liquors is equally true of hard cider, not always regarded as a stimulant, and especially of the various brands of "bitters," all of which contain alcohol, some of them in considerable quantity. We do not except even "temperance bitters," which we have proved to contain as much alcohol as many brands of lager beer. "Bitters" as a class are filthy concoctions of bad whisky and various cheap herbs of no real value except as a means of enriching the pockets of their mercenary manufacturers.

The idea recently advanced, that food which is rich in bone-making material should be avoided during the pregnant state, we consider a mischievous error which ought to be corrected. It is really dangerous to mother as well as child to follow this advice, since Nature is not easily thwarted in the attainment of her purposes; and when bone-making material is needed for the child, if an adequate supply is not afforded from some other source, she will not hesitate to seize upon such material which has already been deposited in the system of the mother, thus damaging, sometimes to a serious extent, the osseous system of the mother for the benefit of the developing child whose interests are sometimes made paramount to those of the parent. The notion that labor is made

more severe or dangerous by supplying the child with such nourishment as its proper development really requires is so contrary to the conclusions which would be dictated by ordinary good sense that we are astonished to see it given any credence. The bony system of the child will not be developed to such an extent as to furnish any impediment to parturition, even when bone-making material is provided in greatest abundance, unless there is some morbid condition; and when this is the case—and it cannot be determined beforehand—the omission of certain articles of diet will not be likely to affect the diseased condition to a sufficient degree to make any appreciable difference with the result. Fortunately, also, this morbid development of the child before birth is so exceedingly rare that if real benefit were to be derived from a special dietary excluding the whole-grain preparations and other foods rich in bone-making material, it would not be worth while to starve nine hundred and ninety-nine embryonic human beings for the doubtful benefit which might be afforded to the mother of the one-thousandth.

“*Longings.*” —The craving which pregnant women often experience for various articles of food cannot be regarded as an expression of a real want upon the part of the system, for very often the articles most eagerly desired are those of a positively injurious character; however, it is generally best to yield to the demands of the capricious appetite so far as can be done without doing positive injury to the digestion or the interests of the child, especially if there is much nausea and loss of appetite. We feel



confident, however, that in the majority of cases the craving is not so strong that it cannot be readily controlled by a little determination on the part of the prospective mother, and when the article craved is manifestly an improper one, the will should be set actively at work to resist the morbid appetite.

The popular notion that if a craving of this character is not gratified, the child will be marked in some peculiar manner corresponding to the nature of the craving, either mentally or physically, is an error. The occasional instances of seeming confirmation of the notion are nothing more than coincidences. We refer particularly to the supposition that "mothers' marks," so-called, which often resemble berries of various kinds, are produced by a craving on the part of the mother for the variety of fruit which they happen to resemble. It is of course possible that a prolonged and absorbing "longing" on the part of the mother for any particular article might so affect the mental and nervous systems of the child as to develop in it a similar appetite; but we do not think the influence of such mental conditions on the part of the mother are usually sufficiently prolonged to produce any such effects. "Longings" are usually very capricious in character, and the constant change counteracts the danger of the formation of a morbid tendency in the child.

The appetite of the mother is often so delicate and capricious that special pains must be taken to provide such food as will be inviting and palatable; but we do not approve of the common practice of humoring every whim and fancy which the mind may

happen to fasten upon. A morbid and unnatural appetite, if strong and not controlled by the will, may be most easily gotten rid of, sometimes, by being gratified, provided the gratification is not continued. If the "longing" is of a very tantalizing and teasing character, this means may be tried as a last resort; but care must be taken that the use of the injurious article is not continued any length of time.

Under a healthful regimen, mental, moral, and physical "longings" are not usually difficult to control, and seldom become at all troublesome. Those in whom they are the most imperious are usually persons who have habitually yielded to the demands of appetite, and who are of an impulsive disposition and have not acquired the art of self-control. The cultivation of firmness of character and subordination of the emotions and impulses to the reason and judgment are the very best measures to be recommended for the prevention of this one of the inconveniences involved by the pregnant state.

*Exercise.*—The advantages to be derived from the taking of regular, systematic exercise during the whole period of pregnancy are so great that no woman, whatever her station in life, can afford to ignore this means of securing a safe and speedy termination of the parturient process. Nothing should be more unstintedly condemned by physicians than the habit many women form when pregnant, of yielding to the languor which is often very oppressive, and spending most of their time, especially during the later months of pregnancy, in idleness and inactivity. A pregnant woman who spends most of her time upon



the sofa or in an easy chair, may look forward with certainty to a childbirth, the dangers and sufferings of which will be greatly increased by the bad bodily conditions arising from her indolence. No class of women pass through this trying ordeal so rapidly and so easily as those whose station in life requires of them a daily use of the muscles to such a degree as to maintain good muscular tone and bodily activity. We have known washer-women who worked up to the very day of confinement, or to be able to resume their occupation the day following without inconvenience, although contrary to the advice of their physicians. The ease with which the negro women of the South give birth to their children has long been remarked; and those who are familiar with the wild native tribes of our country assure us that an Indian woman thinks little of the inconveniences of childbirth, and if on a journey stops only for a few hours for rest, and to properly care for her infant, and then is ready to mount her pony and proceed to her destination. The same remark is true of other savage tribes. It is chiefly among the middle and higher classes of society that the pains of childbirth are felt and the dangers of maternity experienced. This fact is almost conclusive evidence that the habits of luxury and idleness which are so common among the women of these classes are the chief causes of making a process which is naturally attended by little suffering and danger, so extremely painful and even hazardous that it is looked forward to with indescribable dread and avoided by every possible means.

The obstetrical process is chiefly muscular in

character. The child is expelled from the womb by the contractions of the womb itself, aided by the action of the muscles of the abdomen. Nearly all the muscles of the trunk are involved in the process, if not in direct action upon the womb or its contents, in so fixing the points of attachment of other muscles as to enable them to bring their whole force to bear in direct expulsive efforts. Hence it is apparent that good muscular ability is one of the most excellent preparations which a woman can possess for the easy and speedy performance of this act.

A woman whose muscles have wasted away in idleness has a long, lingering, painful childbirth because of the weak and inefficient character of the muscular efforts which she is able to make. Hour after hour the womb makes vigorous contractions which are ineffectual because not seconded by the action of other muscles which are weak and powerless from disuse, and the unaided organ becomes exhausted before it has accomplished any real progress. Thus the process lingers till the agony becomes so extreme and unendurable that the physician is obliged to come to the rescue with a pair of forceps and extract the child by force, running the risk of mutilating its features, compressing its delicate brain to such a degree as to injure its mental development, or even destroy its life entirely, to say nothing of the risk of lacerating or tearing the neck of the womb and other soft parts which have not been properly dilated on account of the absence of the successive stages which should precede the final one of delivery. At the present day no obstetrician thinks of going to a



confinement without a pair of forceps in his visiting case, and many physicians whose practice is chiefly among the higher classes, rarely leave the lying-in chamber without making use of the obstetrical forceps.

Two centuries ago forceps were not known, and were rarely needed. The conditions which demanded the use of such an instrument were so rare that their necessity was not recognized. To-day their use is becoming yearly more necessary, and the prospect is that at the present rate of progress in this direction the children of the next generation will nearly all be brought into the world by the aid of this mechanical means.

Some persons cry out against this increasing use of the forceps as though the instrument were a means of torture invented by the doctors for the purpose of aggravating the sufferings of womankind,—a most heartless insinuation against the character of the most generous and self-sacrificing of all professions. The forceps are not an invention made and utilized by the medical profession for any other purpose than the mitigation of sufferings which women bring upon themselves by inattention to the immutable laws of nature.

If women had always lived physiologically, it is probable that such a thing as the obstetric forceps, or such a person as a man midwife, would not to-day exist. The fact is the departures from healthful modes of life have entailed upon woman so much suffering and have encompassed the process of child-bearing with such a host of dangers and possible complications, that it has become necessary that the best intellects

of the world should bend their energies to the devising of means to mitigate the sufferings and lessen the dangers to both mother and child in the crowning process in the procreation of the species.

From the earliest period of pregnancy moderate but regular and systematic exercise should be daily taken. Walking is a most excellent form of exercise for women in this condition, as it calls into gentle activity nearly all the muscles of the trunk as well as those of the limbs. Light calisthenics are also very useful. Special forms of exercise, such as will strengthen the muscles of the abdomen and back, particularly, are in the highest degree desirable. Some of the most valuable of these will be found in the appendix.

Occupation of mind as well as body is very desirable during the whole period of pregnancy, and especially toward the latter end of the period. On this account the exercise afforded by ordinary household duties constitutes one of the best forms of exercise. But it should not be forgotten that the ample supply of fresh air and sunshine which can be obtained only by exercise in the open air is absolutely essential to the maintenance of the high degree of bodily health which is demanded for the perfect accomplishment of the object of the process through which the woman is passing. When long walks cannot be taken, carriage riding may be substituted. These systematic exercises should be taken up to the very day of confinement, care being exercised, of course, to avoid violent exertion of all kinds, and especially about the third and seventh months, particularly if there has pre-



viously been a premature birth or a miscarriage, the latter being most likely to occur at the third month and the former at the seventh.

*Massage.*—When the patient is for any reason unable to take any of the forms of exercise suggested, passive or active-passive movements may be substituted. Massage and Swedish movements constitute the best forms of passive movements for use in these cases. Such of these movements as we consider most useful will be found described in the appendix. Care should also be taken with these movements not to so over-do them as to excite premature action in the womb. There is, however, far less danger from this cause than is generally supposed.

*Dress.*—The evils of fashionable dress have been quite fully considered in a preceding section of this work, and hence we do not need to amplify upon the same subject here; but we wish to impress the fact that all the objections urged against the several evils involved in fashionable modes of dressing are still more cogent when applied to the condition of pregnancy. For a pregnant woman to wear clothing tight about the waist is so manifest an outrage upon nature that the practice was prohibited by law by an ancient Grecian legislator, and ought to be by modern legislatures. Whatever a woman has a right to do to her own body, she has no right to blight for all time the prospects of another being possessed of individual rights as well as herself, although yet a prisoner within her own body. The practice of some women in lacing themselves all through the period of pregnancy for the purpose of “preserving their form,” is

nothing short of absolute cruelty, not only to themselves, but to their unborn infants. Such a practice is so manifestly outrageous that it can scarcely be condoned. Nothing should be worn about the body of a pregnant woman of a close-fitting character. The garments should be perfectly loose. Such a thing as a corset should not be thought of, although now and then an elastic abdominal supporter or a wide bandage made to fit the abdomen may be necessary. The muscles of the back and abdomen should be so strengthened by exercise that they will be prepared to sustain themselves without the aid of "bones" or anything of the sort. The fact that the need of such aids is felt is evidence of the strongest character that their use would be injurious and that what is really required is a course of muscular training by which the weakness may be overcome.

The remarks which have elsewhere been made respecting the equable protection of the body and the clothing of the feet, are all particularly applicable to the pregnant condition, but need not be repeated here.

The underclothing should be of soft flannel, by preference. If woolen fabrics are not well tolerated by the skin, as is sometimes the case, thin silk or cotton garments may be worn next the skin with thicker woolen garments outside; but when the skin is not irritable, woolen next the skin is much to be preferred to any other fabric.

A word should be said in this connection about the relation of clothing to the breasts. The compression of the breasts by corsets is often the cause



of great injury and suffering. The long-continued pressure causes some degree of atrophy of the gland and also obliteration of some of the ducts so that the proper secretion of milk may be made impossible, and if the secretion is established, abscesses are likely to form, causing "broken breasts" and all the attendant suffering and subsequent deformity. Compression also frequently causes so great a depression of the nipple as to make nursing difficult or impossible, a condition which often requires a long and persevering treatment to overcome, and may not be remediable even by this means.

The wearing of "pads" over the breasts is also a practice to be condemned, as by this means the heat is retained and an unnatural condition produced which renders the gland susceptible to disease and less able to perform its proper function. The unnaturally sensitive condition of the gland during pregnancy makes these facts particularly important at that time.

*Bathing.*—The influence of baths in maintaining a healthy condition of the system in general has been so well understood for years that we need not say more on this point than to impress the importance of giving special attention to the maintenance of a healthy action of the skin by frequent bathing. A general bath should be taken at least twice a week, and every other day is not too often for most persons. Special attention should be given to local cleanliness, as the increased blood supply of the parts increases the local secretion and makes more frequent cleansing necessary, while under ordinary circumstances a local bath with fine castile soap and water may not be re-

quired more than two or three times a week. During gestation such a bath is needed at least daily. No fear need be felt that the bath will disturb the contents of the womb. The bath may be taken with an ordinary syringe, care being taken not to employ more than very gentle force, and that the temperature of the water is not above 100° F. nor below 90° F. The best means for taking a local douche is the syphon or fountain syringe. For further directions, see appendix. A little soap should be used, and if there is considerable leucorrhœa, certain remedies, as elsewhere directed.

Aside from these baths, which are useful in a general way, other baths may be taken which are of very great value as means of preparing the system for easy childbirth. Among the most useful of these is the sitz bath, directions for taking which will be found in the appendix. The temperature of the water should be about 94° F. at the beginning of the bath, and should be cooled to about 88° F. at the conclusion, after continuing ten minutes to half an hour. The warm vaginal douche taken in connection with the bath, the quantity used being one to three or four gallons of water at a temperature as nearly as possible that of the body, is a most valuable additional means of obviating many of the dangers of childbirth, and facilitating the exit of the new being into the world. These two baths combined will accomplish more to lessen the suffering of childbirth than all other known means. They are especially serviceable in cases in which there has been previous disease of the womb. We should add in this connection the cau-



tion that the temperature should not vary much from that of the body, as either a hot or a cold douche might occasion a miscarriage.

The baths above described should be taken during the early months of pregnancy, two or three times a week, and daily or even twice a day during the last few weeks. We have seen the most satisfactory results follow the employment of these simple measures when perseveringly used, even when the same persons had on previous occasions suffered extremely.

*Care of the Breasts.*—By proper care of the breasts during the few months preceding childbirth, much suffering during the nursing period may be saved to the mother, and dangers to the child may be avoided. As previously observed, the breasts should not be compressed by tight clothing, nor heated by “pads.” They should be protected from pressure and from overheating. The effect of pressure is to depress the nipple so that it cannot be grasped by the mouth of the child, thus making nursing impossible, and also, when severe and long-continued, to obliterate the ducts of some of the gland lobules, thus confining the milk secretion and giving rise to abscesses or “broken breast” after childbirth.

When tender, as is often the case during pregnancy, a hot fomentation or a hot poultice may be applied. Pain accompanied by excessive heat may be relieved by the application of cool compresses.

When the nipple is small and retracted, it should be drawn out daily by the fingers of the mother or nurse, and friction and manipulation should be em-

ployed so as to secure a proper degree of development to prepare it for the child.

When the breasts are small and undeveloped, and there is apprehension that they will fail to supply the necessary nourishment for the child, daily manipulation with the hands should be practiced, together with the daily application of alternate hot and cold sponging or compresses. By this means much can be done to overcome deficiency of development and often to a remarkable degree.

When the surface of the nipple or of the breast in the immediate vicinity is sore or tender, some hardening lotion should be used, as alum or borax in whisky, decoction of oak bark or solution of tannin, or sulphate of zinc solution. See appendix for prescriptions.

*Hygiene of Ante-Natal Life.*—The influence of the mother upon the child during gestation has already been referred to under the head of "Heredity," and the facts there presented need not be repeated here. We wish, however, to impress still further a few points, and especially to call attention to the fact that since it is evident that accidental influences and circumstances acting upon the mother affect the child either favorably or unfavorably, it becomes the duty of the mother to surround herself with such influences and to supply such conditions and circumstances as she knows will be for the best good of her developing infant. In this work she should be aided so far as possible by her husband and by all those about her who have an opportunity to render her assistance. Work of so important a character as this, the



influence of which can only be estimated in eternity, demands the earnest and prayerful attention of every prospective mother. The self-denial which must be exercised, the subordination of the appetites, desires, tastes, and convenience to the interests of another being which the duties of the mother involve, afford a moral discipline which if rightly appreciated must result in good to the mother as well as to the child, and, like every act of duty in life, no matter how remotely relating to the individual, reacts upon the doer through the reflex influence of mental and moral discipline.

The special influence of the mother begins with the moment of conception. In fact it is possible that the mental condition at the time of the generative act has much to do with determining the character of the child, though it is generally conceded that at this time the influence of the father is greater than that of the mother. Any number of instances have occurred in which a drunken father has impressed upon his child the condition of his nervous system to such a degree as to render permanent in the child the staggering gait and maudlin manner which in his own case was a transient condition induced by the poisonous influence of alcohol. A child born as the result of a union in which both parents were in a state of beastly intoxication was idiotic.

Another fact might be added to impress the importance of having the new being supplied from the very beginning of its existence with the very best conditions possible. Indeed, it is desirable to go back still further, and secure a proper preparation

for the important function of maternity. The qualities which go to make up individuality of character are the result of the summing up of a long line of influences, too subtle and too varied to admit of full control, but still, to some degree at least, subject to management. The dominance of law is nowhere more evident than in the relation of ante-natal influences to character.

The hap-hazard way in which human beings are generated leaves no room for surprise that the race should deteriorate. No stock-breeder would expect anything but ruin should he allow his animals to propagate with no attention to their physical conditions or previous preparation.

Finding herself in a pregnant condition, the mother should not yield to the depressing influences which often crowd upon her. The anxieties and fears which women sometimes yield themselves to, grow with encouragement, until they become so absorbed as to be capable of producing a profoundly evil impression on the child. The true mother who is prepared for the functions of maternity, will welcome the evidence of pregnancy, and joyfully enter upon the Heaven-given task of molding a human character, of bringing into the world a new being whose life-history may involve the destinies of nations, or change the current of human thought for generations to come.

The pregnant mother should cultivate cheerfulness of mind and calmness of temper, but should avoid excitements of all kinds, such as theatrical performances, public contests of various descriptions, etc. Anger,



envy, irritability of temper, and, in fact, all the passions and propensities should be held in check. The fickleness of desire and the constantly varying whims which characterize the pregnant state in some women should not be regarded as uncontrollable, and to be yielded to as the only means of appeasing them. The mother should be gently encouraged to resist such tendencies when they become at all marked, and to assist her in the effort, her husband should endeavor to engage her mind by interesting conversation, reading, and various harmless and pleasant diversions.

If it is desired that the child should possess a special aptitude for any particular art or pursuit, during the period of pregnancy the mother's mind should be constantly directed in this channel. If artistic taste or skill is the trait desired, the mother should be surrounded by works of art of a high order of merit. She should read art, think art, talk, and write about art, and if possible, herself engage in the close practical study of some one or more branches of art, as painting, drawing, etching, or modeling. If ability for authorship is desired, then the mother should devote herself assiduously to literature. It is not claimed that by following these suggestions any mother can make of her children great artists or authors at will; but it is certain that by this means the greatest possibilities in individual cases can be attained; and it is certain that decided results have been secured by close attention to the principles laid down. It should be understood, however, that not merely a formal and desultory effort on the part of the mother is what is required. The theme selected

must completely absorb her mind. It must be the one idea of her waking thoughts and the model on which is formed the dreams of her sleeping hours.

The question of diet during pregnancy, as before stated, is a vitally important one as regards the interests of the child. A diet into which enters largely such unwholesome articles as mustard, pepper, hot sauces, spices, and other stimulating condiments, engenders a love for stimulants in the disposition of the infant. Tea and coffee, especially if used to excess, undoubtedly tend in the same direction. We firmly believe that we have, in the facts first stated, the key to the constant increase in the consumption of ardent spirits. The children of the present generation inherit from their condiment-consuming, tea-, coffee-, and liquor-drinking, and tobacco-using parents, not simply a readiness for the acquirement of the habits mentioned, but a propensity for the use of stimulants which in persons of weak will-power and those whose circumstances are not the most favorable, becomes irresistible.

The present generation is also suffering in consequence of the impoverished diet of its parents. The modern custom of bolting the flour from the different grains has deprived millions of infants and children of the necessary supply of bone-making material, thus giving rise to a greatly increased frequency of the various diseases which arise from imperfect bony structure, as rickets, caries, premature decay of the teeth, etc. The proper remedy is the disuse of fine-flour bread and all other bolted grain preparations. Graham-flour bread, oatmeal, cracked wheat,



and similar preparations should be relied upon as the leading articles of diet. Supplemented by milk, the whole-grain preparations constitute a complete form of nourishment, and render a large amount of animal food not only unnecessary but really harmful on account of its stimulating character. It is by no means so necessary as is generally supposed that meat, fish, fowl, and flesh in various forms should constitute a large element of the dietary of the pregnant or nursing mother in order to furnish adequate nourishment for the developing child. We have seen the happiest results follow the employment of a strictly vegetarian dietary, and do not hesitate to advise moderation in the use of flesh food, though we do not recommend the entire discontinuance of its use by the pregnant mother who has been accustomed to use it freely.

A nursing mother should at once suspend nursing if she discovers that pregnancy has again occurred. The continuance of nursing under such circumstances is to the disadvantage of three individuals, the mother, the infant at the breast, and the developing child.

Sexual indulgence during pregnancy may be suspended with decided benefit to both mother and child. The most ancient medical writers call attention to the fact that by the practice of continence during gestation, the pains of childbirth are greatly mitigated. The injurious influences upon the child of the gratification of the passions during the period when its character is being formed, are undoubtedly much greater than is usually supposed. We have no doubt that this is a common cause of the transmission of libidinous tendencies to the child; and that the ten-

dency to abortion is induced by sexual indulgence has long been a well established fact. The females of most animals resolutely resist the advances of the males during this period, being guided in harmony with natural law by their natural instincts, which have been less perverted in them than in human beings. The practice of continence during pregnancy is also enforced in the harems of the East, which fact leads to the practice of abortion among women of this class who are desirous of remaining the special favorites of the common husband.

The general health of the mother must be kept up in every way. It is especially important that the regularity of the bowels should be maintained. Proper diet and as much physical exercise as can be taken are the best means for accomplishing this. When constipation is allowed to exist, the infant as well as the mother suffers. The effete products which should be promptly removed from the body, being long retained, are certain to find their way back into the system again, poisoning not only the blood of the mother but that of the developing foetus.

### THE DISORDERS OF PREGNANCY.

The pregnant condition is one which is especially liable to certain derangements of the system, some of which are wholly peculiar to this state, while others are frequently the result of other causes. It cannot be justly supposed that these morbid conditions are necessary accompaniments of the function of maternity, for they do not appear when the function is per-



formed in a perfectly physiological manner. They must be regarded as among the results of the perverted state into which the race has fallen, and in which there have been great departures in a great variety of ways from the normal conditions of the race. It should be added that a careful observance of all the suggestions made in the preceding section will effectually prevent nearly all the disorders to which we here call attention.

*"Morning Sickness."*—This is one of the earliest, and sometimes one of the most serious, complications of pregnancy, occurring usually only in the earlier and later months of pregnancy. The nausea, sometimes accompanied by vomiting, most often occurs in the morning just after rising.

*Treatment.*—This difficulty is often very obstinate, but very simple measures will give relief in the majority of cases.

Give the patient something to eat before she rises in the morning, as a bowl of brown bread and milk. Food should be taken at least fifteen or twenty minutes before attempting to get up, and after rising, the patient should dress quickly and go out in the open air for a walk, unless the weather forbids.

The abdominal bandage is a very excellent means of relieving this unpleasant symptom. It should be worn continually for a week or two both day and night and then should be omitted during the night. Daily sitz baths are also of great advantage. In many cases, electricity relieves this symptom very promptly. When nearly all kinds of food are rejected, milk and lime-water may be employed. In

very urgent cases in which the vomiting cannot be repressed, and the life of the patient is threatened, the stomach should be given entire rest, the patient being nourished by means of nutritive injections. (See appendix.) Fomentations over the stomach and swallowing of small bits of ice, are sometimes effective when other measures fail.

It is claimed by some gynecologists of large experience that this symptom is the result of disease of the neck of the womb, particularly abrasion. It is recommended that slight dilatation of the os-uteri should be employed. This should of course be done by a physician or an experienced nurse.

*Acidity and Flatulence.*—When there is much acidity or flatulence, conditions which are very common indeed, vegetables and starchy foods should be avoided, together with butter, sugar, pastry, and sweets of all descriptions. Such persons should also for a time avoid the use of raw fruits and soups, and should refrain from taking much fluid at meals. The use of hot water in considerable quantity about three hours after each meal is a most excellent remedy for this condition, the effect being to cleanse the stomach from its souring, fermenting contents and to stimulate the sluggish, digestive processes to more vigorous action. The use of hot milk at the time of eating is also to be recommended in these cases. Both the water and the milk should be taken at as high a temperature as possible without discomfort.

Various disorders of digestion are exceedingly common during this period, such as heartburn, pyro-



sis, etc., most of which can be quite promptly relieved by the adoption of such dietetic measures as are required by the particular condition present. All of these conditions, with their proper treatment, are thoroughly discussed in a volume by the author entitled, "Digestion and Dyspepsia," to which the reader is respectfully referred, as our space is too limited to allow of the full consideration of the subject here.

*Constipation.*—This condition is so very common that we cannot omit noticing it here, although we have treated the subject more fully in the work referred to above. In many cases relief will be afforded by the adoption of a diet composed chiefly of fruits and grains. The large use of flesh meats and of fine-flour bread is one of the most common causes of inactivity of the bowels during pregnancy. The coarse grain preparations should be freely used, and also vegetables, when the patient is able to digest them. Figs, stewed prunes, and other fruits of a laxative character, if freely used by the patient, will generally obviate the necessity for other means. Drinking a glass of cold water before breakfast is an excellent means of securing a regular evacuation of the bowels.

In case dietetic measures are insufficient, the enema may be resorted to. As small a quantity of water should be used as will secure the desired movement. It is also better to employ water at a moderately low temperature, so as to keep the blood-vessels of the part well toned, as a means of preventing hemorrhoids. A very excellent plan by which

the dependence upon the enema may be somewhat avoided, or overcome, is to inject into the rectum at night, just before retiring, two tablespoonfuls of water containing ten drops of spirits of camphor. This will often provoke a movement of the bowels at once. If the fluid is retained over night, it will be quite certain to secure a prompt movement, at least if the same quantity of camphor water is used as an enema soon after breakfast. A tablespoonful of glycerine in three or four spoonfuls of water used in the same manner is equally useful and often more agreeable to the patient.

Light massage to the bowels, together with exercises of the trunk such as are recommended for the purpose of strengthening the abdominal muscles (see appendix), is of great value in relieving this unpleasant symptom. The same is to some degree true of walking and gentle calisthenic exercises.

It is very unwise to become dependent upon the use of the enema, and hence a persevering effort should be made to secure a healthy activity of the bowels by regulation of the diet, and by the employment of the other means suggested. The same remark is still more emphatically true respecting the use of the laxatives of various sorts so commonly resorted to by pregnant women. The habit thus formed is very often difficult to overcome, and the resulting mischief more than can be well described.

*Hemorrhoids, or Piles.*—This condition is the usual accompaniment of the preceding, of which it is commonly the result, although it is sometimes fairly attributable to the pressure exerted upon the blood-



vessels of the lower bowels by the pregnant womb. The suffering from this source is often very great, constituting one of the most serious inconveniences of the pregnant state.

*Treatment*: Keep the bowels loose by means of the measures mentioned for the relief of constipation. Linseed tea is especially serviceable for an emollient enema. If the constipation is very obstinate, a soap and water enema may be employed to empty the bowels. (See appendix.)

The pain of hemorrhoids may generally be relieved by the application of a hot fomentation. A large, soft sponge is useful for the purpose. The daily sitz bath which should be taken during the later months of pregnancy is a most excellent means not only of allaying the pain by relieving local congestion, but also overcoming the tendency to constipation. When the pain of moving the bowels is very great, the patient will find great relief by sitting over a vessel half filled with hot water for a few minutes before making the attempt. In some cases it is better that the water should be in immediate contact with the body.

When there is hemorrhage from the bowels, or "bleeding piles," an ointment consisting of a dram of tannin dissolved in an ounce of vaseline should be thoroughly applied after each movement, care being taken to introduce the ointment to the point at which the bleeding occurs.

*Disorders of the Bladder.*—The bladder is often the seat of troublesome affections during the pregnant condition. Abnormal irritability, pain in passing

urine, inability to retain the urine a proper length of time, and the opposite condition, or failure of the bladder to evacuate its contents as frequently or completely as proper, are among the most common troubles of this sort. Irritability of the bladder is most generally due to neglect to empty the bladder of its contents with proper frequency and regularity. In some cases, the bladder troubles are due to displacements of the womb existing before pregnancy occurred. This is especially true of incontinence of urine, which generally results in these cases from pressure upon the bladder by the enlarged and displaced womb.

Irritability of the bladder is generally relieved by copious water-drinking, the free use of fruit, and relieving the organ regularly once in five or six hours. The recumbent position is the best remedy for incontinence of urine. Sometimes this difficulty may be prevented by the use of the abdominal bandage for the purpose of holding the uterus in place. Retention can often be overcome by the employment of the warm sitz bath, the bladder being relieved while in the bath. Another very efficient means of overcoming retention is the warm vaginal douche. The temperature should be as nearly as possible 100° F., the internal temperature of the body. The bladder will generally evacuate itself during the administration of the douche. A hot enema is also of service in these cases.

*Disorders of the Womb.*—The occurrence of pregnancy in a woman suffering with chronic disease of the womb is generally a most unhappy event, notwithstanding the fact that a cure is sometimes sought



through this means. Disease of the womb greatly increases the perils of the pregnant condition, and is not likely, in the majority of cases, to be at all benefited by the changes induced by pregnancy.

Prolapsus and retroversion are conditions which often require the attention of a physician to relieve. If begun in time, however, great benefit may be derived from the postural treatment described in the appendix, and particularly the knee-chest position illustrated on Plate XII.

*Vaginal Discharges.*—The discharges which take place from the vagina during pregnancy are quite various. The most common is a profuse mucous discharge or leucorrhœa, the best remedy for which is the daily use of vaginal injections administered with the syphon or fountain syringe. The water should be at the temperature of the body, and little force should be employed. The various remedies elsewhere recommended for leucorrhœa are useful in this form of the affection.

Occasionally strong gushes of a watery fluid occur, followed for some time by a dribbling of the same. The remedy for this difficulty is complete rest in bed. Fluid discharges occurring during pregnancy should receive prompt attention, as they indicate a liability to miscarriage.

*Itching Genitals.*—This affection is usually an accompaniment of an acrid leucorrhœal discharge. The treatment is the same as elsewhere described for the same affection.

*Varicose or Enlarged Veins.*—This condition of the veins of the lower extremities is a very frequent

complication of pregnancy, and is often the source of much suffering and inconvenience to the patient not only during the pregnancy, but afterward. Hence it should receive careful attention. The cause is mechanical, being found in the pressure of the heavy uterus against the large veins which return to the heart through the abdomen the blood gathered by the veins of the lower extremities. Sometimes a similar enlargement of the veins of the external organs of generation on one or both sides also occurs.

*Treatment:* The limbs should be supported by means of an elastic bandage or elastic silk stocking, whenever the patient is on her feet. A flannel bandage made of strips of flannel torn across the web so as to give some elasticity may be used in place of the rubber bandage, though less efficient. The bandage should be applied evenly, from the toes upward, as high as needed, even extending to the body if necessary. When the patient is sitting or lying down, the feet should be elevated a little higher than the hips if possible. If the labia become very much swollen, the patient should remain as much as possible in a horizontal position, in the meantime pressing out the blood from the distended veins by steady compression with the hand. A pad and bandage can be adjusted in such a way as to answer the same purpose.

*Dropsical Swelling of the Feet and Limbs.*—General dropsy, indicated by puffiness of the face and swelling of the limbs so that pitting is produced by pressure with the finger, is a very serious complication of pregnancy, indicating probable disease of the



kidneys. This condition should receive prompt attention from a competent physician, to whom should be given a specimen of the urine for examination. The most useful remedies are such as will induce active perspiration, as the hot-air bath, the wet-sheet pack, the blanket pack, etc. The patient should be allowed no animal food except milk, the diet being made up chiefly of fruits and grains. When the swelling is confined to the feet and limbs, it may be treated by means of the bandage or the elastic silk stocking as directed for varicose veins of the limbs.

Rubbing of the feet and limbs in an upward direction is a means of treatment which should not be neglected. The rubbing should be administered two or three times daily, and for half an hour at a time.

*Neuralgia.*—The neuralgia of pregnancy is sometimes a most disagreeable complication. The affection may assume a great variety of forms. It most frequently affects the face. Very often the teeth are the seat of the pain. Sometimes the pain is mostly confined to the back or chest or the limbs.

*Treatment:* The most useful measures of treatment are fomentations to the affected part, the use of dry heat, alternate hot and cold applications, and electricity, particularly the galvanic current. These measures are not usually efficient, however, unless the exciting cause, which may generally be found to be some form of indigestion or an impoverished condition of the blood, is carefully sought for and removed.

*Headache and Disturbances of Vision.*—Severe, continuous headache and various disturbances of vision, such as blurring, double sight, etc., are some-

times of quite serious import. These cases should be investigated by a competent physician. Whenever these symptoms occur, a careful examination of the urine should be made, to determine if albumen is present. The headache may generally be relieved by cool or hot compresses to the head, hot fomentations, or hot and cold sponging of the upper part of the spine, warm sitz or foot baths, and other derivative measures.

*Shortness of Breath.*—Shortness of breath or difficulty of breathing is frequently among the most prominent inconveniences of the latter stages of the pregnant state. Patients subject to asthma, and affected with organic disease of the heart, suffer much more than do others. The interference with respiration is produced in most cases by crowding upward of the abdominal organs against the diaphragm, thus preventing its proper descent, and making it impossible for the patient to take a full inspiration. Shortness of breath is sometimes due to poverty of the blood.

The first class of cases can be relieved but little, as the cause cannot be removed. Some advantage may be derived, however, by the application of faradization to the chest, for the purpose of strengthening the respiratory muscles. In cases in which the difficulty arises from debility, the patient should receive such treatment as will secure improvement of nutrition.

*Fainting.*—This symptom occurs quite frequently during the first few months of pregnancy. The cause is the morbidly susceptible condition of the

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nervous system during this period, very slight causes being sufficient to occasion intense mental excitement and profound disturbance of the circulation.

*Miscarriage and Abortion.*—These terms are applied to cases in which the foetus is discharged before the seventh month. Miscarriage occurs most frequently in fleshy persons and those who are subject to menorrhagia, or profuse menstruation. Nearly all the severe acute diseases may give rise to miscarriage. Violent excitement or exertion, either mental or physical, displacements of the uterus, together with chronic inflammation and tumors of the organ, falls, and other violent accidents, severe vomiting or coughing, bad hygiene, and sexual indulgence, may be enumerated as the principal causes of abortion.

The symptoms of abortion within the first two weeks do not differ very greatly from those attending profuse menstruation. Not infrequently miscarriages occur at this period without the woman's being conscious of the fact. In the third or fourth month, there is considerable hemorrhage, and some portion of the foetus is likely to be retained in the womb, where decomposition not infrequently takes place, imperiling the patient's life. Criminal abortion is very frequently attended by fatal results. The moral aspect of this question has been fully considered elsewhere. (See pages 351–369.) Miscarriage occurring as late as five or six months, very closely resembles labor.

It has been observed that miscarriage is most apt to occur at or near the regular time for menstruation,

if the function had continued, and hence special care should be observed at these periods.

*Treatment:* In cases in which abortion habitually occurs at a certain time, complete rest should be enjoined upon the patient. She should not be upon her feet at all until the dangerous period is past. Sexual excitement should also be strictly prohibited. In case flooding occurs, or other symptoms of abortion, the patient should at once go to bed and apply cold compresses over the bowels, and tepid injections of tannin or a decoction of white-oak bark into the vagina. Abortion or miscarriage is much more likely to be followed by disease of the womb than natural labor, and hence every possible precaution should be taken to prevent exposure and overdoing in these cases.

*Premature Labor.*—Births occurring after the beginning of the seventh month are termed premature. The causes are essentially the same as those which produce abortion. The rules laid down for the management of labor at full term, are equally applicable to premature labors. It should be remarked that extra preparations should be made to give the feeble infant likely to be born in these cases the best possible chances for life.

*Death of the Fœtus.*—When many symptoms of pregnancy which have been distinctly present disappear, there are grounds for suspicion that death of the fœtus has been occasioned by some cause. The causes which occasion death of the fœtus are essentially the same as those which give rise to abortion and premature labor. The fœtus is generally expelled



a week or ten days after it dies, but cases are recorded in which it has been retained many months.

*Molar or False Pregnancy.*—Two forms of false pregnancy occur. In one of these, after the usual symptoms of abortion, and with considerable pain and hemorrhage, a fleshy body of varying size is expelled, which may be shown by a close examination to be an undeveloped foetus. This form of false pregnancy is attended by little danger.

In the other form, the symptoms of pregnancy continue up to the fourth or fifth month, though no foetal movements are ever felt. The abdominal walls are generally extended more than at the same time in true pregnancy. After a time, a large quantity of bloody serum is discharged, along with severe hemorrhage, the escaping fluid containing small, bladder-like bodies resembling grapes. This is known as the hydatidi-form. This form of false pregnancy is by no means free from danger, and requires the attention of a skilled physician.

*Flooding.*—When this serious symptom occurs, the patient, if not already in a recumbent position, should at once go to bed. Cold compresses should be applied over the lower part of the bowels. She should be given an abundance of cold water to drink. Cold water may also be injected into the rectum with advantage. In case of a severe hemorrhage after miscarriage or premature labor, the best remedy is the prolonged hot-water vaginal douche. If not speedily effective, a strong, hot, saturated solution of alum, about one pint in quantity, should be injected into the vagina. If necessary, a tablespoonful of

powdered alum may be carefully inclosed in a bag of thin muslin and introduced into the vagina and retained for a few hours.

*Puerperal Convulsions.*—This is a very serious disease which may occur during pregnancy, or during or after labor. It generally occurs in patients who have suffered with disease of the kidneys during pregnancy, as shown by swelling of the feet and limbs, puffiness of the face, and the presence of albumen in the urine. Among the first symptoms are disorders of vision, as blurred sight, double vision, and continuous headache. The attack generally begins with strong muscular contractions, in which the muscles of the limbs become rigid, and respiration ceases through the rigidity of the muscles of the chest. This is followed in a short time by spasmodic twitching of the various muscles. Sometimes the contortions of patients suffering with this affection are frightful. The most common, and probably the sole, cause of true puerperal convulsions, is poisoning of the blood by the elements of the urine which are not eliminated on account of congestion or inflammation of the kidneys.

Sometimes attacks occur resembling those of epilepsy. These cases are probably due to some other cause.

*Treatment:* The preventive treatment of this disease is by far the most important. It consists, first, in thorough attention to the laws of hygiene relating to the pregnant state. The diet should be chiefly fruit, and farinaceous articles of food. Sugar and meat should be carefully discarded. As soon as the



swelling of the feet and puffiness of the face are observed, the patient should take frequent warm baths with wet-sheet packs, vapor baths, and other treatment which will induce active sweating. Considerable quantities of water should be daily drank, so as to replace the water removed by the sweating process, which should be made almost continuous.

At the time of the attack, vigorous efforts should be made to relieve the system of the obnoxious element by which the brain and nervous system is being poisoned, through the medium of perspiration. If possible, the patient should be given a hot blanket pack, hot bottles being packed around her to induce copious sweating. If the bowels are constipated, they should be relieved by a warm enema. A spoon handle wrapped with cloth should be placed between the teeth to prevent the tongue's being bitten. The patient should not be violently restrained, but should be gently prevented from injuring herself. When coma is present, as is frequently the case, cold or iced compresses should be applied to the head. Hot and cold applications should be made to the spine. If these measures do not bring relief, chloroform may be used to subdue the spasms. This remedy is generally effective. When the contractions have ceased, energetic measures should be taken to prevent their recurrence by exciting activity of the kidneys and skin.

*Cramps.*—Spasmodic contraction of the muscles of the limbs is a very common and often troublesome affection incident to pregnancy. Measures to improve and maintain the tone of the nervous system

should be thoroughly employed as preventive means. When the cramping occurs, the affected muscles should be firmly grasped and vigorously rubbed. Sometimes the cramping may be made to cease by simply walking about for a few minutes. Fomentations or hot and cold applications made to the lower part of the spine usually afford relief in a prolonged attack where other measures fail. Hot sponging of the cramping muscles is also a useful remedy.

*Painful Breast.*—This unpleasant affection is not infrequently a cause of very great discomfort to the pregnant woman. When there is much heat and a tense feeling or hardness, cool compresses should be applied, cloths being dipped in cool or cold water and applied, being changed as often as they become warmed. Alternate hot and cold sponging will sometimes afford more prompt relief. When there is pain without heat, fomentations or hot sponging may be employed two or three times a day with benefit, or soothing liniments may be employed.

*Palpitation of the Heart.*—This symptom is the result of reflex action, and may generally be relieved by alternate hot and cold sponging of the spine, and either hot or cold applications over the heart. It is generally occasioned by some disturbance of digestion.

*Rigid Skin.*—In some cases the skin of the abdomen is wanting in elasticity to such a degree that great pain and uneasiness is caused by the strain upon the abdominal walls during the later months of pregnancy. To relieve this condition, the skin of the abdomen should be daily rubbed with vaseline or



olive-oil and thoroughly manipulated. Hot sponging is also a useful measure for increasing the activity of the skin and developing a healthy condition.

*Malpositions.*—The best time to treat malpositions is before the critical period of childbirth has arrived. This may seem to be a singular statement, but a careful consideration of the subject will be sufficient to convince any one of its truth. Active muscular exercise is one of the very best means of preventing malpositions. The head of the child being the heaviest portion, it naturally gravitates downward, thus securing a natural presentation. When, however, from any cause, a malposition has been produced, it is of the utmost importance that it should be discovered and corrected before the period of childbirth arrives. That this is possible has been demonstrated again and again. It is now well understood by scientific obstetricians that under ordinary circumstances the "presentation" can be made out weeks before the hour of confinement, and that when this knowledge has been gained, the position, if wrong, can be readily corrected by the employment of such external manipulations as the case may require. Every physician who undertakes the practice of obstetrics ought to be practically familiar with the proper method of procedure, and should make an examination of all suspected cases sufficiently early to enable him to apply the remedy. Something of an idea of the mode of applying this remedy for malpositions may be obtained by reference to Fig. 2, Plate L.

Women ought to know that by the use of this

means the pains and perils of childbirth may be almost infinitely lessened. Most obstetrical operations, so fraught with danger to both mother and child, are made necessary by malpositions which may be easily corrected without pain or inconvenience to the mother or danger to the child by proper manipulation prior to confinement. In view of this fact, every woman will recognize the importance of consulting an experienced and intelligent physician at intervals during the last months of pregnancy to assure herself that all is well, or to submit to the proper treatment for correcting any faulty position, thus avoiding the danger and suffering which might otherwise be inevitable.

In some cases it becomes necessary that a properly constructed supporter should be worn to prevent a return of the difficulty after the malposition has been corrected.

### LABOR, OR CHILDBIRTH.

*(See Appendix for instruction in Aseptic Midwifery.)*

The period of gestation, or labor, usually lasts, in the human female, from 278 to 300 days, at the end of which time it is terminated by labor, or parturition. The approach of labor is usually indicated by premonitory symptoms for some hours or even days beforehand, but sometimes occurs suddenly without any premonitory symptoms.

The following are the leading signs of the approach of the termination of pregnancy: Gradually increasing irritability of the bladder, with much difficulty in standing or walking, and a change in form of the ab-



domen which results from the settling down of the womb, leaving the waist smaller, but increasing the prominence of the lower portion of the abdomen a short time before the labor is to begin. Also the external parts become swollen, and there is a leucorrhœal discharge of a thick, clear matter somewhat resembling the white of an egg. Uterine contractions, quite painless in character, are also indicative of the approaching crisis. These contractions at first occur at irregular intervals. When they become regular, the labor has begun. The pains usually begin in the back and sacrum, and extend to the front part of the abdomen. What are termed false labor pains arise from colic, constipation, or irritation of the bowels. They differ from labor pains in being irregular. The term pain, as used in obstetrics, is applied to the spasmodic uterine contractions which take place, together with the pain incident to the same.

*Presentation and Position.*—The term presentation has reference to the particular part of the body which presents at the mouth of the womb. The term position has reference to the location of the presenting part in the passages of the mother. The most usual presentation is the head. Occasionally the other extremity of the trunk takes precedence, forming what is termed a "breech presentation." In still other cases the body lies crosswise of the outlet, a presentation which must be modified in some way before the infant can be born.

There are various modifications of each of these classes of presentation, that is, other parts of the head may present. In a perfectly natural labor, the

vertex of the head is the presenting part. But various other parts of the head may be presented, more or less complicating the process.

*Stages of Labor.*—Labor is divided into three stages.

1. Dilation of the mouth of the womb. This is indicated by cutting pains felt mostly in the back, contractions taking place in the womb only, and gradually growing more and more frequent until the neck of the womb is fully dilated.

2. Expulsion of the child, by means of stronger contractions in which the abdominal muscles contract, as well as the uterus.

3. The expulsion of the after-birth.

The average length of labor in women who have previously borne children is about six hours, the first four of which are occupied in the first stage, and the latter two in the second stage. The after-birth is often expelled at once after the expulsion of the child, but is more often retained five to thirty minutes.

The first and second stages of labor are often considerably prolonged. Some women, especially those who have broad hips and are well adapted to childbirth, pass through the process of labor in a much shorter space of time, in some cases not more than thirty minutes or an hour being occupied. In women who have not borne children before, especially those who are somewhat advanced in life, labor is often very greatly prolonged.

Various obstacles frequently arise to delay the process; such as inactivity of the womb, rigidity of



the neck of the womb or of the perinæum, contracted pelvis, and malpositions of the child.

Simple minded, primitive people, in a savage state, by the study of nature have in all parts of the world arrived at the discovery of very much the same means for facilitating the painful processes of childbirth. The most important of all these natural methods is massage, which is almost universally practiced, not only by the Chinese, among whom it seems to have originated, under the name of *Cong-fou*, but by their neighbors, the Siamese and Japanese, being termed by the latter *Ambouk*. Our own native tribes, the North American Indians, as well as the aboriginal inhabitants of Mexico, and the Pueblos, also practice methodically a sort of massage, the purpose of which is to assist nature in bringing into the world the new being. The natives of Africa, India, the South-Sea Islands, and the savage tribes of Central Asia, all employ certain modifications of the same art peculiar to themselves, some of which, however, are so rude and violent as to be, apparently, dangerous to the life of both mother and child.

Some of the ancient and rude practices referred to have been in use among the lower classes of civilized nations, particularly the Welch and Dutch peasantry, and some of the older medical practitioners of the present day can recollect of meeting with relics of such methods among the earlier settlers of Kentucky and Ohio.

Massage, as referred to in this connection, has reference to various manipulations practiced upon the abdomen and back, the purpose of which is to expel

the child or the after-birth, to excite uterine contraction, or to correct malpositions. The exact mode of administering such manipulations will be described a little later. The object of this mention is to call attention to the fact that this one of the most recent additions to scientific obstetrical practice is almost as old as the race, and simply an adoption of what has been practiced by savages from time immemorial, with, of course, such improvements as civilized man with his greater intelligence is easily able to add.

*Preparation for Labor.*—The whole period of pregnancy should be a course of preparation for its termination; but in addition to the various measures previously described, special measures may be adopted at its very termination by which the pains and dangers of childbirth may be greatly lessened and the process expedited.

First we mention the vaginal douche. No better means is known for securing natural and ready dilatation of the neck of the womb at delivery than the hot water douche. It should be administered two or three times daily for the last week or two of pregnancy, and when the pains of childbirth begin, may be employed continuously for hours with benefit. It is one of the most effectual means of relieving the annoying, ineffectual pains of the first stage of labor. The temperature should not be over 110° F., and the patient should be placed in such a position as to make her as comfortable as possible. We have witnessed the most excellent results from this method, and can recommend it as well worth a trial, and cer-



tain to yield satisfactory results without any possible danger of doing harm.

Another important means of preparation is the employment of massage to the abdomen and loins. This should be practiced to some extent during the entire latter half of pregnancy; but during the last two or three weeks should be employed more assiduously. Properly applied, this measure is not capable of doing harm. By the aid of it, malpositions may be corrected, the abdominal muscles strengthened, and the patient prepared for the approaching crisis. It should be applied daily for thirty minutes to an hour, during the last two months of pregnancy.

The manipulation consists in rubbing and kneading the abdomen and loins very much after the fashion of kneading bread, care being taken not to make such violent movements as to endanger the child or to force it into a wrong position. There is really little danger of this, however, as the tendency of any manipulation of the abdomen, not purposely directed in a manner to reverse the position of the child, is to bring the head, or heaviest portion, into the lowest part of the abdomen.

Fomentations and friction with unguents applied to the perineum are also of undoubted utility in preparing this part for the extraordinary strain to which it is to be subjected. These measures should be employed two or three times a day, and for fifteen minutes to an hour at a time during the last two weeks of pregnancy.

Care should be taken to keep the bowels loose

and the kidneys acting freely. The diet should be especially simple. The usual amount of exercise should be taken, or as nearly so as possible, to the very day of confinement, unless there should be some complication contra-indicating exercise.

*Management of Labor.*—The first thing to be done at the beginning of labor is to secure the services of a competent attendant. The attendant should, if possible, be a thoroughly trained physician. This is a field in which woman as a physician can fill a very useful sphere. Under no circumstances, except in emergencies, should the important process of parturition be placed wholly in the hands of a midwife whose qualifications, such as she may possess, are wholly derived from experience at the bedside, no matter how large be the number of cases she may have attended. No one person could by practical experience alone in a life-time acquire all the knowledge necessary to meet the urgent emergencies which are liable to arise at any time in childbirth. The science and art of obstetrics have been developed by a very slow process; and as they exist at the present day, are the result of the combined experience of physicians during the last two thousand years. Thorough theoretical knowledge is indispensable as a foundation for practical skill.

As soon as the first labor pains make their appearance, the physician should be promptly notified, and also the nurse, if the latter is not already in readiness. The room in which the patient is to be confined should be a large, light, airy, and pleasant one. But few persons should be allowed to be pres-



ent, and these should be such as are desired by the patient, and no others.

So far as consistent, all her wishes should be complied with, so that she may be in as pleasant a state of mind as possible, and that no mental influence may present an obstacle to prevent the completion of the process in which her physical and nervous powers will be taxed to the uttermost. No remark of a discouraging nature should be uttered in the presence of the patient, but hope and confidence should be inspired.

During this stage the patient need not go to bed. In fact, it is better that she should sit up, as the sitting posture favors the progress of labor. This need not be required, however, if the patient prefers to be in bed. During this stage the patient should quietly allow nature to carry on the work without any attempt to hasten matters by "bearing down," as she may often be encouraged to do by ignorant friends. These voluntary efforts are of no consequence until the neck of the womb is fully dilated. The patient should be allowed to drink cold water or weak lemonade as freely as desired; but stimulants should not be given, as they will produce a feverish state of the system without giving any real strength. Hot teas are also better withheld. If the bowels have not moved freely, they should be relieved by a full enema.

During this stage, the bed should be made in readiness. The feather bed, if in use, should be removed and replaced by a moderately hard mattress covered by a sheet. Over this should be placed a

large rubber cloth three or four feet wide and six feet long. This should be covered with a comfortable, and a sheet placed over all.

At the beginning of the second stage the patient should go to bed, and her clothing should be drawn up under her arms so that it will not be soiled, the lower portion of the body being protected by a sheet or petticoat. The patient may lie on the left side or on the back. If the foetus is strongly inclined toward the right side, it is better for the patient to lie upon the left side. During the severe pains which characterize the second stage of labor, the back of the patient should be supported by firm pressure with the hand. The knees should be drawn up and fixed in such a position as to give them support during the pains. The nurse should take hold of the hand or wrist of the patient to give her an opportunity to make firm traction during the pain.

It is at this stage of labor that much can be done by an intelligent midwife or physician to facilitate the process of childbirth and to relieve the sufferings of the patient. Rubbing and manipulation of the muscles of the loins and thighs often afford great relief to the patient. In case the pains are inefficient, and hence the progress slow and the patient discouraged, friction should be made over the abdomen with the hand, gentle pressure being made above the uterus so as to press it down into the cavity of the pelvis; when there is considerable delay, what is known to physicians as "expression" should be employed. There are several modes of applying this useful measure, but the following, known as the



method of Kristeller, is the most simple and effective :—

The patient lying upon the back, the operator places his hands upon the abdomen in such a manner as to grasp the womb, as shown in Plate L, Fig. 1. First the abdominal walls should be gently rubbed against the uterus, then slight pressure should be made in a downward direction, care being taken to bring the womb exactly to the middle of the body so that its mouth may be brought in direct line with the middle of the pelvic canal. The pressure should be gradually increased for three or four seconds, and then gradually diminished, the whole time occupied by the pressure being five to eight seconds. The hand should be retained in position, and the pressure repeated at short intervals. During the early part of the second stage, the intervals between successive pressures should be two or three minutes; but as labor advances, it should be shortened to one or one-half minute.

The points of pressure should be changed occasionally, the force being brought to bear alternately upon the upper lateral portions of the uterus instead of constantly over the central portion.

The systematic application of this simple measure will in most cases obviate the use of the forceps, even in difficult labors, and in cases in which the forceps are required, it should always be used as a means of bringing the child within easy reach of the forceps and facilitating the extraction. In the first labors this method should always be employed, and by

means of it the tediousness of such cases may be wonderfully lessened.

In cases of breech or other abnormal presentation the method is also found most serviceable. It is vastly superior to ergot and all other medicinal means of exciting uterine contraction, and is free from the dangers well known to accompany the use of drugs for this purpose.

The most proper time for the application of "expression" is after the membranes have ruptured, when the os is well dilated and the external parts are becoming tense from the pressure of the head of the child. When the method becomes sufficiently well known to secure its general and thorough adoption, we doubt not that it will almost entirely replace the forceps, and thus save thousands of women from the pain and often serious injuries resulting from instrumental delivery.

The Mexican midwife practices "expression" by means of the feet. The patient is placed upon the floor, and the operator stands upon the abdomen, the heels being placed upon the stomach, and compression and friction applied to the womb with the toes. The midwives of several barbarous tribes employ essentially the same means by suspending the patient to a rope attached to the ceiling and a band passed beneath the arms, while the operator grasps her about the waist and with the pressure of her entire weight performs a stripping movement downward. Others strap about the waist a strong leather band, known among the Indians as a "squaw belt," the belt being tightened and drawn downward as the child advances.



In some instances the pregnant woman applies "expression" herself by pressing the body against the end of a thick stake driven into the ground obliquely. These methods, though effective, are much less so than the more scientific one employed by modern obstetricians, and are liable to result in injury to both mother and child.

In the intervals between the pains, if the patient is exhausted, she should be allowed to sleep, if possible, in order to recuperate her strength. When the face becomes hot and flushed, it should be bathed with cool water. As the termination of labor approaches, as indicated by the increasing severity and frequency of the pains which at this time often become almost continuous, a supply of hot water should be got in readiness, a large pailful being brought to the bedside, together with a large pan to be ready for use if necessary. A syphon syringe should also be filled with hot water and held ready for use. A bottle of camphor should be at hand, and a strong cord, made of silk or linen thread twisted and well waxed, with a pair of scissors, should be in readiness for prompt use.

As the head of the child presses severely upon the perinæum, the efforts of the patient should be restrained, to avoid rupture by giving the tissues time to dilate. Pressing back the back of the head and elevating the chin of the child by means of two fingers placed in the rectum, is the best means of preventing laceration of the perinæum.

As soon as the head passes out, the cord should be felt for, as it is sometimes wound around the

neck in such a way as to interrupt the circulation as the strain is brought to bear upon it. It also sometimes happens that knots are tied in it, which being tightened by the strain may cut off the supply of blood from the child too soon. If the body is not speedily expelled, the child may be withdrawn by making traction with the finger placed in the armpit.

During the delivery of the child the hand of the nurse or assistant should be kept upon the abdomen of the mother in such a way as to grasp the upper part of the womb, firm pressure being made for the purpose of securing contraction of the organ. This pressure should be kept up until the after-birth is expelled and the bandage applied. If the after-birth is not promptly expelled, and the uterine contractions seem to be suspended, friction should be made over the uterus; and after a few minutes, firm pressure should be applied, the womb being grasped in the manner shown in Fig. 1, Plate L. The pressure should be firm as can be borne by the mother without discomfort, and should be applied at brief intervals, every half minute at least, until the *placenta* is expelled, gentle traction being made upon the cord to assist its expulsion.

As soon as born, the child should be brought to the edge of the bed and carefully examined. Generally it at once utters a cry, which indicates that its lungs are filled with air. In case it does not cry, and breathes feebly, or only gasps, the hand should be dipped in cold water and placed upon its chest, or the chest may be slapped with the hand. This will generally be sufficient to start the respiration. If



the child is limp and pale, and makes no efforts whatever at respiration, it should be immediately inverted, being held with the head downward, and hot flannels should be wrapped about it. Efforts should be made to excite respiration by compressing the chest at intervals of a few seconds. Care should also be taken to see that the mouth is cleared of mucus, though this is not likely to be necessary unless the child has begun to breathe just as the head is being born and has drawn mucus into the throat. If the face has a purplish appearance, the child should be placed at once in a warm bath of a temperature of  $105^{\circ}$ , or as hot as can be safely used without injury to the skin, and cold water should be dashed upon the chest. Artificial respiration may also be employed at the same time. These measures should be continued for some time and should not be abandoned so long as any evidence whatever of the action of the heart can be obtained. Some cases are recorded in which infants have been resuscitated after apparent death for fully an hour.

As soon as it breathes freely or the cord has ceased to pulsate, the cord should be tied in two places; the first about two inches from the body, the other about three inches. The child should then be laid upon its side, not on the back, as the side position favors the escape of mucus from the throat. If there should be much rattling in the throat, indicating the presence of considerable mucus, the infant should be laid with its head downward and to one side, so as to allow the mucus to escape.

*Washing and Dressing the Child.*—If the birth is a premature one, having occurred before the infant was fully developed, the child will be smaller than usual and less well developed; its movements will be slight and feeble, its cry will be very faint, and the countenance will have a peculiarly old expression. Such a child requires extra care and warmth. It should be carefully wrapped in soft cotton. Very great care will be required in rearing it, as it will at first be too weak to nurse and must be fed with a spoon. It should not be washed and dressed for some hours, and should be kept very warm. Care should be taken in washing the child not to expose it to cold so as to produce blueness of the surface, as is often done. It should be recollected that the infant has all its life thus far been accustomed to a temperature of nearly  $100^{\circ}$ , and being wholly without protection when born, and keenly susceptible, it must suffer quite severely from cold. Another important fact is that the process of respiration is not completely carried on by the lungs for some days after birth, the skin performing a very important part of the work. When it becomes cold, it can no longer perform this extra function, and the blood of the child is quickly poisoned by the accumulation of carbonic acid and other effete products which should be eliminated.

The best plan for washing the child is to place it in a warm bath, the temperature of which is about blood heat, and then rub it gently with a sponge dipped in warm, weak suds made of castile soap. If the surface is covered with curd-like matter, as is sometimes the case, it should be smeared with a mixt-



ure of equal parts of egg and sweet oil beaten up together. After the bath, the surface should be anointed with a little olive-oil or vaseline. If some portions of the curdy matter seem to be firmly adherent to the skin, no violent efforts should be made to remove them, as they will dry up and disappear in a short time without further attention. After being thoroughly washed, the child should be carefully examined to see that it possesses no deformity. The outlets of the body should receive particular attention, as in some cases the anus or urethra are closed.

The best method of dressing the cord is this: Grasp the cord with the thumb and finger close to the body, cutting it off at the ligature. Squeeze out all its contents by pressure with the thumb and finger of the other hand, keeping a firm grasp upon it with the thumb and finger first applied so as to prevent hemorrhage. Now apply another ligature about an inch from the end of the stump. By this means the cord will be very greatly reduced in size and may be much more easily dressed than when treated in the usual way. In dressing, apply a soft, thin muslin bandage, about as wide as the first joint of the thumb, wrapping it around the cord three or four times. Now apply another ligature outside of the bandage, and the dressing is complete. Some prefer to apply for a bandage a soft linen cloth four or five inches square, smeared upon the under surface with mutton tallow, and having a hole in the center through which the cord is slipped. The cloth is generally scorched, but not much is gained by this practice.

By dressing the cord in this way, much offensiveness which arises from decomposition is avoided.

It is generally customary to next apply what is termed the belly-band. This is not so important as many suppose, if indeed it is needed at all, which we very seriously doubt. If applied it should not be drawn too tight, and should be fastened with tapes instead of pins. The best material to use is very soft flannel. When the dressing is completed, the infant should be placed in a warm bed; but it should not have its head covered, as it needs an abundance of air, as well as an adult. The infant, when thus properly dressed, generally sleeps several hours. When it awakes, it should be applied to the breast. Although the milk is not yet formed, the efforts of the child to nurse will promote the secretion and will also benefit the child, as the first secretion furnished by the breast, a watery fluid known as *colostrum*, has a slightly laxative effect upon the bowels of the infant, freeing them from their contents, which is termed *meconium*.

*The Binder.*—After the child has been born and its immediate wants attended to, the binder or abdominal bandage should be applied to the mother. The binder consists of a double thickness of strong muslin cloth or a large linen towel. It should be applied in such a way as to give the mother the least possible amount of inconvenience in the application. In fastening, it should be drawn so as to fit the body snugly, and should be pinned from above downward. The bandage is generally applied more tightly than is necessary, the serious consequence of which is not



infrequently prolapsus of the womb. In case there is any marked tendency to hemorrhage after the birth, a folded towel should be laid over the womb beneath the bandage. The use of the binder is now by no means so universally recommended as formerly. It is probable that it may be dispensed with in most cases with no danger and with real advantage. It need not be worn after the first day or two; but a bandage should be worn for a few days after the mother first begins to walk about.

The soiled clothing should next be removed. The patient should be washed and wiped dry, and a dry, clean sheet with old cloths for absorbing the discharges should be placed beneath the patient. Care should be taken that the patient is warmly covered. A slight shivering will often occur, but this is generally from nervousness. If the patient has lost much blood, or is very weak, the head should be placed low; only a very small pillow or none at all should be used.

The patient should now be allowed to rest. Simple drinks may be given when desired, but stimulants are rarely called for. The patient will generally fall asleep if allowed to do so, and will awake after two or three hours very much refreshed. Food may be taken at regular times, but should be simple and unstimulating. Milk, toast, oatmeal porridge, and occasionally soft boiled eggs, should constitute the chief diet. Beefsteak and other meats are better avoided.

Attention should be given to the bowels and bladder. If the bowels do not move by the second day, an enema should be administered. Either tepid wa-

ter or flaxseed tea may be employed. The bladder should be emptied within a few hours after labor. If there is inability to urinate, a warm fomentation may be applied over the bladder between the thighs, or a warm vaginal douche administered. This will usually bring relief, especially the latter measure, the patient being directed to urinate while the douche is being given. If these simple measures do not succeed, it will be necessary to use a catheter. The bladder should be relieved at least two or three times a day.

During the first twenty-four hours after childbirth, the nurse should carefully examine the condition of the womb by placing the hand upon the abdomen, every two or three hours. If the organ is found contracted down to a proper size and firm, all is well; but if it is appreciably enlarged and soft, or large and tense, friction should be at once applied and kept up until firm contractions are induced.

For the first day, the discharge from the womb is of a bloody character; after this, it gradually becomes watery, and in from three to five days it becomes thicker. This is termed the *lochial* discharge, and generally continues from one to three weeks. It is often checked for a day or two at the time when the milk secretion begins. In order to prevent the discharge from becoming offensive, as is sometimes the case, the vaginal douche should be taken at least twice a day; and when the discharge is very profuse, more frequently. The water employed should be quite warm, and should contain a teaspoonful of carbolic acid dissolved in a tablespoonful of glycerine or alcohol to the quart of water. The injection of hot



water not only cleanses the parts, but stimulates complete contraction of the tissues, and thus prevents danger from hemorrhage, and hastens the process by which the organ returns to its natural size. A solution of permanganate of potash in the proportion of a teaspoonful of the crystals to a quart of water, is also an excellent injection for use when the discharge is offensive. The carbolic acid solution should be thoroughly shaken before it is used. When blood reappears in the discharges after a few days, it is an indication that the process referred to is not taking place regularly and satisfactorily. This is generally the result of the patient's getting up too soon.

*Milk Fever.*—This is a term applied to the feverishness which is sometimes present on the third day after confinement. The fever may be introduced by a slight chilliness. The patient has thirst, headache, and frequent pulse. The breasts are generally somewhat swollen, harder than natural, and sensitive; throbbing and darting pains are sometimes felt in them. It is probable that the fever is not the result of the milk secretion, but is due to the absorption of decomposing discharges through the raw surfaces of the vagina and womb, and the swelling and tenderness of the breasts is due to the fever. The thorough use of disinfectant injections will generally prevent the occurrence of this fever. Placing the child to the breast soon after its birth, and at regular intervals afterward, is also an excellent means of prevention, as it not only empties the breast and promotes the natural secretion, but also stimulates contraction of the womb, and thus hastens the process of *involution*.

The inability of a mother to nurse her child is almost as great a misfortune to herself as to the child, as nature requires this natural stimulus to uterine contraction to enable her to do her work in reducing the womb to its natural condition after childbirth. The treatment at this time should consist in giving the patient little fluid to drink, feeding her chiefly with solid food, and quenching the thirst by means of pieces of ice. Hot fomentations should be applied to the breasts, and they should be emptied by means of careful manipulations, unless the child is able to withdraw the secretion by nursing. Sometimes the swelling is so great that the nipple is partly buried, thus interfering with the nursing. In this case the breast-pump should be employed to draw out the nipple, in case it cannot be drawn out by manipulation with the hands, which is by far the best means, or a nipple shield with a rubber teat should be employed. In case of necessity, an adult may act as a substitute for the child, or a young pup may be employed. When the breasts have been properly cared for during pregnancy, such troubles as this very rarely occur.

*Care of the Breasts.*—Care should be taken to wash the nipples carefully with cold water both before and after nursing. If the breasts are large, flabby, and pendulous, it is well to support them by means of bandages properly applied, passing under the breasts and over the neck. This precaution will often prevent inflammation of the breasts.

The friction and massage to which the nipple should be subjected during the months of pregnancy,



will so effectually harden and toughen its covering of skin as to render it able to stand the hardest usage during a prolonged period of nursing. In applying massage to the nipple, press back the areola with the forefinger until the nipple becomes prominent, then seize it, and draw it forward in imitation of the action of the child in nursing, at the same time pinching and rolling it between the thumb and finger. Pressing and rolling the breast between the hands is also a useful means for preparing the gland for use, and for increasing its activity when there is deficient secretion. The same method may be employed for the purpose of drawing forward the retracted nipple of a nursing mother.

*Sore Nipples* will rarely occur when these precautions are observed. If the nipple should become cracked and tender, especial attention should be given to cleansing, both before and after nursing, and an ointment of carbolated vaseline, ten drops to an ounce, should be used, care being taken to remove the ointment before the nipple is given to the child. A solution of tannin in glycerine, fifteen grains to the ounce, is also an excellent application for sore nipples. It should be used twice a day, after the nipples have been well cleansed.

Another excellent remedy is the following lotion, which should be applied twice a day with a camel's-hair brush: Carbolic acid twenty drops, glycerine two teaspoonfuls, water a tablespoonful and a half; mix thoroughly. Several other excellent prescriptions for sore nipples are given in the appendix.

Care should also be taken to give the nipple as

much rest as possible, by using the breasts alternately, and making the intervals between nursing as long as possible without doing injury to the child. One of the greatest causes of sore nipples is compression of the breast by improper dressing before and during pregnancy. In some cases, severe pain may be felt whenever the child is taken to the breast, in consequence of neuralgia of the part. This should be carefully distinguished from soreness of the nipple by a critical examination of the breast.

*Inflammation of the Breast.*—If swelling of the breast occurs, accompanied by redness, pain, and tenderness, it should be given entire rest at once. Hot fomentations should be applied to relieve the pain. The fomentations should not be simply warm, but they should be as hot as can be borne. If relief is not obtained in this way, ice-compresses or an ice-pack should be used continuously until the symptoms disappear. It is well to remove the ice-pack or ice-bag for a few minutes every two or three hours, applying a hot fomentation.

By a vigorous application of these measures, an inflammation may often be cut short in its course. It is very important that the first indication of inflammation should be detected. When this is done, the continuous application of cold and complete emptying of the gland by manipulation will usually control the inflammatory tendency. Rubbing of the breast is also an excellent means of producing absorption of inflammatory products.

After the inflammation is controlled, the breast should be carefully kneaded in such a manner as to



thoroughly remove the partially coagulated milk certain to be present. A failure to do this is one of the chief causes of the formation of abscesses. The common use of the breast pump is objectionable as a means of emptying the breast. By its use, violence is frequently done to the delicate tissues, so that actual harm is done, sometimes leading to permanent injury. By patient and well directed efforts, the breast can be emptied by manipulation in almost every case, so that the pump need be resorted to but rarely. The following is the best method of emptying the breast by this means :—

The nurse should seat herself beside the patient so that the left forearm rests lightly on the chest. Place the right hand beneath the breast in such a manner as to support it, allowing it to rest in the crotch formed by the thumb and the first finger. Now with the fingers of the left hand, sweep from the upper and left border of the breast toward the nipple with gentle, gradually increasing pressure. Occasionally raise the breast from the chest and roll it between the palms; after ten or fifteen minutes thus spent in alternate stroking and rolling of the breast, it will become softer and much less nodular, and a drop or two of milk may be squeezed out. Both hands should now be used, the left being employed in the same way as the right, one lifting and supporting the breast, and the other stroking as described, the action of lifting and stroking being alternately performed by the two hands. By this means the milk will be pressed out of the gland into the milk sinuses around the nipple. When this becomes distended, the

nipple is to be milked in the same manner as the teat of a cow. After the secretion is once started, the breast may be emptied very rapidly. If there is only a slight obstruction, a few skillful strokes of the hand will overcome it; but when more serious, persevering but always gentle efforts must be made.

A little olive-oil, vaseline, or other unguent should be used to facilitate the manipulation and prevent irritating friction of the skin. A breast threatened with inflammation should be emptied by this means every few hours, as the inflammatory action can be much more readily controlled in an empty breast than in one distended with milk.

Inflammation of the breast most usually occurs in the third or fourth week after delivery. The usual exciting causes are neglect to properly empty the breast on account of a sore nipple, "a cold," neglect of the bowels, too rich food, or some similar infraction of the laws of hygiene relating to the nursing period.

A breast subject to inflammation should be made to rest functionally, if possible. It is not always easy to stop the flow of the milk, but something can be done by pressure. A firm bandage should be applied about the breast, and constant pressure should be employed. Dried sponge is very useful for this purpose. A large sponge should be moistened and then dried under pressure so as to flatten it. A hole should be cut in the middle so as to prevent pressure upon the nipple and to allow the milk to be pressed out. This should be bound over the breast, being exchanged in five or six hours for another sponge prepared in the same manner, thus maintaining the pressure almost

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without intermission, if need be for days. By this means the blood supply is lessened, and so the secretion is diminished.

The application of adhesive straps is also a useful means of applying pressure, although by no means equal to the compressed sponge.

If the breast becomes tense, hard, shiny, and discolored, an abscess is forming or has formed, and should be at once opened so as to prevent burrowing and absorption of pus. This is of course the duty of the physician, and the exact mode of procedure need not be further described.

It should be remarked by way of caution that the prolonged use of poultices or fomentations should be avoided, as they often produce a sodden and relaxed condition of the breast.

*To Check the Secretion of Milk.*—In some cases it becomes desirable that the secretion of milk should be checked. This is especially important in cases of still-birth and the sudden death of the child. The most effective measures for checking the secretion of milk is to require the patient to abstain from the use of fluids of any sort, and the application of pressure. The food should be of a solid character. The thirst may be relieved by taking small quantities of ice. This should be continued until the fourth or fifth day, when there will usually be no further difficulty. The breasts should be partially relieved of their contents by manipulation, as already described, or by the breast pump if necessary, but should not be entirely emptied. The application of compressed sponge as described in a previous paragraph is one of the best of

all known means of rapidly drying up the secretion. The application of the ice-pack or cold compresses to the breasts, is also an excellent means for diminishing the secretion. It is also a good plan to apply to the breasts two or three times a day a mixture of equal parts of sweet-oil and spirits of camphor, and to keep the breasts constantly covered with a cloth saturated with spirits of camphor.

*Galactorrhœa.*—Sometimes the secretion of milk is too profuse, the secretion being in consequence poor in quality, and so affording insufficient nourishment to the child while draining the system of the mother. The remedial measures to be employed are the same as those mentioned as useful “to check the secretion of milk.”

*To Promote the Secretion of Milk.*—This must be accomplished chiefly by regulation of the diet and attention to the general health, especially to the improvement of the digestion. The patient should make free use of liquid food, particularly fresh milk, sweet cream, oatmeal porridge, graham gruel, and other whole-grain preparations. Teas of various kinds are of little consequence and do not increase the quantity of milk except by the addition of water. The use of wine, beer, ale, and other alcoholic stimulants is a practice to be in the highest degree condemned, as it not only deteriorates the quality of milk, but makes the child liable to various diseases. An eminent physician declares that in many instances in which beer and ale are used, the infant is not sober a moment from the time it begins nursing until it is weaned.



Gentle manipulation of the breast and nipple, as previously described, is in many cases very efficacious in promoting the secretion of milk. By this means, the secretion has been produced in women who have never borne children, in such a quantity as to enable them to act as wet-nurses with entire success.

*Getting Up.*—No definite time can be set at which it would be safe for every woman "to get up." Some are as able to get up in three or four days as others at the end of two weeks. The traditional "nine days for lying in" has no substantial foundation. As a general rule, the woman should remain recumbent in bed for a week or ten days. If she has been getting along nicely, she may be permitted to sit up a few minutes after the fourth or fifth day while the bed is being changed and aired; but if the lochial discharge becomes bloody after being up, it is an indication that she should remain in bed some time longer.

Getting up too soon after confinement is a frequent cause of some of the most troublesome chronic ailments from which women suffer. The worst of these is enlargement of the womb, due to *sub-involution*, a condition in which the organ fails to return to its natural size, remaining permanently enlarged. When everything progresses well, this process generally takes place in six or eight weeks. During this time the patient should exercise very great care to avoid exposure of any kind. Getting the feet wet, being chilled, overexertion of any kind, either mental or physical, and anything which has a prostrating effect, will be likely to check the natural retrograde process,

the prompt and thorough performance of which is very important. Special care should be taken so long as the lochial discharge is still present. Care during this period will often save the patient from many years of suffering.

*Hemorrhage after Labor.*—Sometimes the womb does not contract so firmly as it should after childbirth, in consequence of which its greatly dilated blood-vessels remain open, and frightful hemorrhage is the result. This is also sometimes caused by only partial separation of the after-birth, the remainder of the after-birth being attached so firmly that it cannot be expelled by the contractions of the organ. In other cases more or less hemorrhage continues for some time after childbirth in consequence of a laceration or tear of the neck of the womb.

*Treatment:* When the hemorrhage is due to partial attachment of the placenta, the after-birth should be removed as quickly as possible. In order to effect this, it is sometimes necessary for the physician to pass his hand into the womb. The necessity for this measure may almost always be obviated by the employment of the hot water douche at as high a temperature as can be borne by the patient, and by the employment of "expression," described on page 452. When the directions there given are followed out, hemorrhage after labor will rarely occur.

Where hemorrhage is due to failure of the uterus to contract, the best remedy known is the hot water douche and massage or friction over the womb. The syphon syringe, or some other efficient instrument of the kind should be in readiness for use in an emergency



of this sort. The water employed should be as hot as can be used without burning the tissues, or giving great discomfort to the patient, which will usually be at a temperature of about 110° to 120° F. These means combined will seldom fail. Uterine contraction may also be stimulated by alternate hot and cold applications to the abdomen over the womb and to the breast.

Care should be taken by the nurse to examine the patient frequently after childbirth to see that there is no unusual hemorrhage.

*Inactivity of the Womb.*—When labor is delayed in any of its stages in consequence of failure of the uterus to contract with sufficient vigor, it is necessary to adopt means for the purpose of stimulating the contractions. Among the various simple measures which may be employed with advantage are the application of cold water to the breast and over the abdomen. Sometimes alternate hot and cold applications are more effective than cold alone. Sometimes the inactivity is due to exhaustion, and rest is needed. In such cases the patient should be allowed to sleep, if possible, and should be given food. The most important and effective of all measures is massage or “expression.”

The hot vaginal douche should also be employed, and faradic electricity may be in some cases used with advantage. When the last-named agent is employed, the positive pole should be applied to the back and the negative over the womb.

*Retention of the After-birth.*—As remarked in the preceding paragraph, hemorrhage sometimes oc-

curs in consequence of failure of the uterus to contract properly after the child has been born, or in consequence of an unusually firm attachment of the placenta to the internal walls of the uterus. When the uterine contractions suddenly cease after the child is born, so that the placenta is not expelled, the remedies suggested for inactivity of the womb should be applied. In case these are not effective, it becomes necessary for the physician to pass two or more fingers into the womb, and by gradually working them under the placenta, loosen it and bring it away. This is a painful procedure, and should not be resorted to until a very thorough trial of other means has been made.

*Rigidity of the Womb.*—In some cases labor is delayed by a failure of the neck or mouth of the womb to dilate with sufficient rapidity. This is sometimes due to an early rupture of the membranes, in consequence of which the "bag of waters," which precedes the child as it passes downward, does not perform its usual and important function of dilatation. It is also sometimes due to an unnatural condition of the tissues of the neck of the womb. In these cases the pains are very severe and acute, being felt mostly in the sacrum. The patient is feverish and very restless, the pulse becomes very frequent, and the patient suffers great distress. By internal examination, the os, or mouth, of the womb is felt like a hard ring.

The best remedies for this condition are the hot sitz bath and hot vaginal douche. They may be continued for several hours if necessary without det-

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riment. Large, hot enemata are also very useful in this condition. They should be retained as long as possible.

*Rigidity of the Perinæum.*—In this condition, the perinæum, or portion of the tissue between the vagina and rectum, does not dilate as it should, but the central portion bulges forward while the upper edge remains hard and unyielding. This is the most frequent cause of rupture of the perinæum. The best remedies are the hot sitz bath and hot fomentations to the parts. A very excellent way of applying moist heat is by means of a large sponge dipped in hot water, and applied as hot as can be borne. The hot-water douche and the hot enema are remedies of very great value. The employment of daily sitz baths during the later months of pregnancy, and of daily massage of the part are the most reliable means of preventing this complication.

*After-Pains.*—In some cases, contractions of the uterus continue for a longer or shorter period after labor is completed. When these contractions are so severe as to give the patient great discomfort, hot fomentations should be applied over the abdomen. The hot vaginal douche is also an excellent means of relieving after-pains by producing firm contraction of the womb. Friction over the womb is also a useful measure for these cases by securing thorough contraction of the uterine muscles.

*The Use of Ergot.*—This drug, once very popular, indeed thought to be almost indispensable in all cases of childbirth, is now charged by many of the most eminent obstetricians with being the cause of

much increase of suffering during childbirth, and serious subsequent disease. It has often been the cause of ruptures of the neck of the womb and of the perinæum by producing too rapid labor. If used at all, it should be only after the delivery of the head, and it is probable that its use can be dispensed with in most, if not all, cases, without detriment to any, and with benefit to many. As elsewhere remarked, the proper employment of massage and "expression" obviates the use of ergot even in those cases in which it has long been considered indispensable.

*The Use of Anæsthetics.*—The employment of anæsthetics in childbirth is a practice of very recent date. When it was first introduced, many fears were expressed that harm would result to either mother or child, or both. Some opposed the measure on moral grounds, claiming that the pains of childbirth were part of the curse pronounced upon Eve, and that the use of anæsthetics for the purpose of mitigating the pain was preventing the execution of the penalty. Notwithstanding the opposition, however, some form of anæsthetic, generally chloroform, is now very largely used, especially in prolonged and unusually painful labors. If the patient is strong and vigorous, and the labor is not unusually severe, there is no occasion for the use of the anæsthetic; but if the contrary of this is true, there is no question but that benefit, as well as comfort, may be derived from the judicious use of chloroform. It is unnecessary to produce profound anæsthesia, or to bring the patient fully under the influence of the drug, and hence there is little or no danger of immediate injury to the pa-



tient. Neither have those opposed to the use of chloroform been able to show that injury results to the child. It should never be used, however, without the advice and constant supervision of the physician. When the proper preparatory treatment has been carefully employed during pregnancy, there will be little necessity for an anæsthetic.

*Twins.*—Twin pregnancy may be suspected when the mother is unusually large, or when there is a double appearance of the enlarged abdomen. Twin birth occurs in proportion of about one to seventy or eighty single births. The usual unpleasant symptoms which occur during pregnancy are greatly exaggerated in twin pregnancy. Complicated labors are also somewhat more frequent in twin births. The birth of the second child generally succeeds that of the first very quickly, but cases have been observed in which several hours and even days have elapsed before the birth of the second child.

*Abdominal Pregnancy.*—It sometimes happens that the impregnated ovum finds its way into the abdominal cavity and there undergoes development; fortunately, occurrences of this kind are very rare. In many cases, the foetus becomes surrounded with a cyst, by means of which it is separated from the rest of the body, and sometimes may be thus preserved for years in a degenerated condition. In other cases, the different portions of the foetus gradually work out through the bowels, or even through the abdominal wall. In still other cases, decomposition and suppuration take place, the system becomes infected with the products of decomposition, and the patient

dies of blood poisoning. Cases have occurred in which, by the performance of a surgical operation, a fully developed child has been removed from the abdominal cavity, the lives of both mother and infant being saved.

*Puerperal Fever.*—This disease is responsible for a large number of deaths following confinement, and a great multitude of chronic, diseased conditions, by which women who have suffered from it are crippled and maimed, many times for life. It is now pretty generally conceded that severe fever following confinement is usually the result of absorption into the system of some of the products of the decomposition taking place in the generative passages. Having gained access to the blood, the diseased germs multiply in great numbers and soon pervade the whole system. In addition to the general fever, inflammations of the womb or its surrounding tissues and the ovary and other organs are very likely to occur, leaving adhesions, consolidations, abscesses, indurations, etc.

The best treatment of this disease is prevention. If the parts are thoroughly washed out two or three times a day with a disinfectant lotion, by means of a syphon syringe, the thorough cleansing being kept up continuously until the lochial discharge has entirely ceased, there is little chance for the germs of disease to find an entrance into the system, and puerperal fever will not be likely to occur. A physician attending one case of the disease will be very likely to convey it to other patients whom he may visit, unless he takes great care to disinfect his person and clothing.



The fever should be treated on the general principles which govern the treatment of fever in other diseases.

Such cases as this require the services of a skillful and experienced physician, and the most careful nursing.

*Lacerations of the Womb and Perinæum.*—The long continuance of a bloody discharge after confinement is ground for suspicion that the neck of the womb has been torn, and the matter should at once receive attention.

After every confinement a careful examination should be made to ascertain whether there has been a tear of the perinæum or any other serious injury to the soft parts of the mother. The neglect of this precaution has left thousands of women to suffer a life-time from a long train of painful ailments which might have been easily prevented by the immediate performance of an operation to restore the torn parts. The old adage, "A stitch in time saves nine," is in no case more applicable than in these.

*Phlegmasia Dolens — Milk-leg.*—This painful complication of parturition usually appears about ten days after childbirth, being ushered in by chills, headache, mental depression, heaviness in the bowels, general uneasiness, feverishness, and a quickened pulse. These symptoms are speedily followed by pain in the groin of the affected side, extending down the limb. Very soon the whole limb becomes hot, swollen, white, and shining. The patient is exceedingly restless and uneasy, and suffers much. There is complete loss of power in the limb. The flesh yields to the finger, but does not "pit" on pressure. The

swelling usually begins at the body and extends downward, but sometimes the reverse is the case.

Nothing positive is known respecting the cause of this disease, except that it is most likely to occur in debilitated patients, especially those who have suffered from severe hemorrhage. It is probable also that lacerations of the neck of the womb and of the perinæum favor the occurrence of the disease by affording an easy channel for entrance of germs and septic matter into the system. It has been observed that the disease is most likely to occur in the left leg, and that it is more frequent in women who have previously borne children than in those who are mothers for the first time. Undoubtedly there is, during the disease, closure of the veins and lymphatic vessels.

*Treatment:* At the very beginning of the attack, the affected limb should be elevated, the calf being supported by a soft cushion by which it will be raised at least a foot above the level of the bed. During the first stages of the disease, hot fomentations and hot sponging of the limb and painful parts should be applied almost constantly. By this means the pain is relieved and the circulation restored at an earlier date than would otherwise be the case. The fever should be relieved by cool sponging, the cool enema frequently repeated, and cool compresses over the bowels. The diet should be light but nutritious, as milk, gruels, beef tea, toast, etc. The bowels should be kept open by the warm water enema, to which may be added, if necessary, a tablespoonful of glycerine or a little soap.

Relief from pain will often be given by rubbing of

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the limb with sweet-oil or vaseline, the rubbing always being in an upward direction, and very gentle. After a few days, the tissues become softer, and when pressed by the finger, show a depression which remains for some minutes,—a symptom known as “pitting.” This indicates that the lymphatic channels are being opened up, and the treatment should now be changed. The limbs should be daily rubbed upward with firm pressure by the hand, beginning at the toes and grasping the whole circumference of the limb, or as nearly so as possible. This should be repeated three or four times a day, and should be continued fifteen to twenty minutes at a time. During the intervals the limb should be bandaged by a rubber or flannel bandage, which should be applied evenly and firmly, from the toes to the thigh, and without so great pressure as to give pain. Alternate hot and cold sponging of the limb and friction with the hand are also valuable measures of treatment. The patient should be kept quiet in bed until all evidence of active disease has disappeared. The bandage should be worn so long as there is any swelling or bloating.

The effects of the disease sometimes persist for a long time. Patients complain of a “wooden feel” which often lasts for months, and sometimes even years, although the attack itself seldom lasts more than two or three weeks. Sometimes a permanent enlargement remains. Fortunately, the disease is not dangerous, and one attack does not seem to increase the liability to the disorder to any great degree, and indeed, second attacks seem to be less severe than first ones. One of the most unpleasant features of

the malady is its liability to appear in the limb of the opposite side when the limb first attacked is beginning to recover.

*Puerperal Mania.*—This form of mental disease is most apt to show itself about two weeks after delivery. Although, fortunately, of not very frequent occurrence, it is a most serious disorder when it does occur, and hence we may with propriety introduce the following somewhat lengthy, but most graphic description of the disease from the pen of Dr. Ramsbotham, an eminent English physician:—

“In mania there is almost always, at the very commencement, a troubled, agitated, and hurried manner, a restless eye, an unnaturally anxious, suspicious, and unpleasing expression of face;—sometimes it is pallid, at others more flushed than usual;—an unaccustomed irritability of temper, and impatience of control or contradiction; a vacillation of purpose, or loss of memory; sometimes a rapid succession of contradictory orders are issued, or a paroxysm of excessive anger is excited about the merest trifle. Occasionally, one of the first indications will be a sullen obstinacy, or listlessness and stubborn silence. The patient lies on her back, and can by no means be persuaded to reply to the questions of her attendants, or she will repeat them, as an echo, until, all at once, without any apparent cause, she will break out into a torrent of language more or less incoherent, and her words will follow each other with surprising rapidity. These symptoms will sometimes show themselves rather suddenly, on the patient's awakening from a disturbed and unrefreshing sleep, or they may super-



vene more slowly when she has been harassed with wakefulness for three or four previous nights in succession, or perhaps ever since her delivery. She will very likely then become impressed with the idea that some evil has befallen her husband, or, what is still more usual, her child; that it is dead or stolen; and if it be brought to her, nothing can persuade her it is her own; she supposes it to belong to somebody else; or she will fancy that her husband is unfaithful to her, or that he and those about her have conspired to poison her. Those persons who are naturally the objects of her deepest and most devout affection, are regarded by her with jealousy, suspicion, and hatred. This is particularly remarkable with regard to her newly born infant; and I have known many instances where attempts have been made to destroy it when it has been incautiously left within her power. Sometimes, though rarely, may be observed a great anxiety regarding the termination of her own case, or a firm conviction that she is speedily about to die. I have observed upon occasions a constant movement of the lips, while the mouth was shut; or the patient is incessantly rubbing the inside of her lips with her fingers, or thrusting them far back into her mouth; and if questions are asked, particularly if she be desired to put out her tongue, she will often compress the lips forcibly together, as if with an obstinate determination of resistance. One peculiarity attending some cases of puerperal mania is the immorality and obscenity of the expressions uttered; they are often such, indeed, as to excite our astonishment that women in a respectable station of society

could ever have become acquainted with such language."

The insanity of childbirth differs from that of pregnancy in that in the latter cases the patient is almost always melancholy, while in the former there is active mania. Derangement of the digestive organs is a constant accompaniment of the disease.

If the patient has no previous or hereditary tendency to insanity, the prospect of a quite speedy recovery is good. The result is seldom immediately fatal, but the patient not infrequently remains in a condition of mental unsoundness for months or even years, and sometimes permanently.

*Treatment:* When there is reason to suspect a liability to puerperal mania from previous mental disease or from hereditary influence, much can be done to ward off an attack. Special attention must be paid to the digestive organs, which should be regulated by proper food and simple means to aid digestion. The tendency to sleeplessness must be combatted by careful nursing, light massage at night, rubbing of the spine, alternate hot and cold applications to the spine, cooling the head by cloths wrung out of cold water, and the use of the warm bath at bed time. These measures are often successful in securing sleep when all other measures fail.

The patient must be kept very quiet. Visitors, even if near relatives, must not be allowed when the patient is at all nervous or disturbed, and it is best to exclude nearly every one from the sick-room with the exception of the nurse, who should be a competent and experienced person.

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When the attack has really begun, the patient must have the most vigilant watchcare, not being left alone for a moment. It is much better to care for the patient at home, when possible to do so efficiently, than to take her to an asylum.

When evidences of returning rationality appear, the greatest care must be exercised to prevent too great excitement. Sometimes a change of air, if the patient is sufficiently strong, physically, will at this period prove eminently beneficial. A visit from a dear friend will sometimes afford a needed stimulus to the dormant faculties. Such cases as these of course require intelligent medical supervision.

*Pelvic Inflammations.*—One of the most serious complications of childbirth is acute inflammation of the uterus or its surrounding tissues. The cause is usually exposure to draughts by which a cold is contracted, neglect to properly cleanse the parts by thorough disinfecting vaginal douches, two or three times a day, allowing the decomposing matters to be absorbed, getting up too soon, neglect to properly evacuate the bowels or bladder, and similar neglects to regard the hygiene of this period with proper care. It is one of the most serious of all the complications of the post-partum period, often leaving the patient a life-long sufferer from adhesions, chronic pelvic abscesses, and other local disorders.

The disease is usually ushered in with a chill. The temperature runs very high in a few hours, as indicated by the rapid pulse, hot, dry skin, and thirst, often accompanied by delirium. There is great local pain and tenderness, the patient can scarcely bear to

be stirred or touched, and can hardly endure the weight of the bed-clothes.

*Treatment:* Energetic measures must be adopted at once. Apply ice bags, or cloths wrung out of ice-water, every five or ten minutes, hot fomentations or hot bags to the spine, hot enemas, and cool sponging of the trunk of the body. The temperature must be lowered as soon as possible. If the cold applications over the seat of pain do not give relief from pain, hot fomentations must be applied every two or three hours for a half hour or more. The hot douche slightly tinged with permanganate of potash solution, must also be assiduously employed, being repeated at least every two or three hours, until the fever begins to diminish. A physician should be called.

#### MISPLACED AFTER-BIRTH.

The placenta, or after-birth, which properly develops at the upper part of the cavity of the womb, is sometimes attached in such a position as to cover the outlet of the organ. In such cases, known as "Placenta Previa," child-birth cannot take place without a frightful hemorrhage, which may be fatal if the condition is not understood beforehand. Hemorrhage may occur at any time after the earliest months, and the danger increases as pregnancy advances. A profuse flow of blood should warn the mother to go at once to bed and send for a physician. In the meantime the bleeding may be controlled by crowding a large sponge with a string attached into the vagina, and pressing it against the mouth of the womb.

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