



LIBRARIES

UNIVERSITY OF WISCONSIN-MADISON

Book III: increasing man power in "Sex Control or Philosophy of Life". 1925

Bennett, Charles B.S., M.A.; Hoff, Charles A. M.D.
New York, NY: Circle Publishing Company, 1925

<https://digital.library.wisc.edu/1711.dl/5ELNMJS2CMMNW8Y>

This material may be protected by copyright law (e.g., Title 17, US Code).

For information on re-use, see

<http://digital.library.wisc.edu/1711.dl/Copyright>

The libraries provide public access to a wide range of material, including online exhibits, digitized collections, archival finding aids, our catalog, online articles, and a growing range of materials in many media.

When possible, we provide rights information in catalog records, finding aids, and other metadata that accompanies collections or items. However, it is always the user's obligation to evaluate copyright and rights issues in light of their own use.

SEX CONTROL

or
PHILOSOPHY OF LIFE

by

Charles Bennett, B.S., M.A.

*Director, American Efficiency Bureau; Efficiency Counselor,
Author and Lecturer*

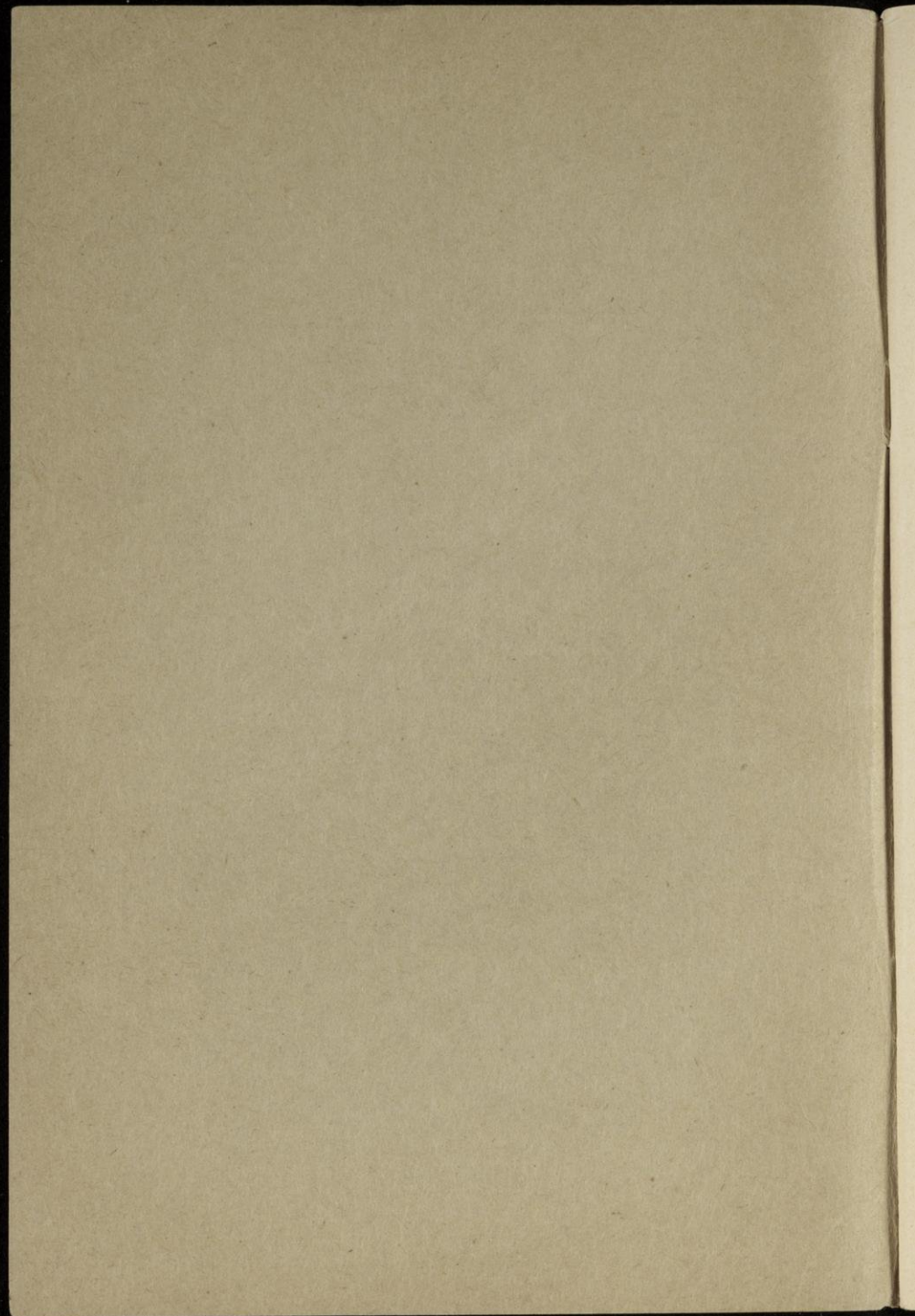
and

Charles A. Hoff, M.D.

*Formerly Physician to the Southern Ohio Hospital,
Author of Treatise on "The Use of Sedatives",
"General Paralysis", etc.*



CIRCLE PUBLISHING COMPANY
NEW YORK, N. Y.



Copyright, 1925

BY

THE JOHN A. HERTEL CO.

All Rights Reserved

BOOK III
INCREASING MAN POWER

| | PAGE |
|---|------|
| FOLLIES OF PREVENTION | 57 |
| IMPOTENCE AND STERILITY | 63 |
| HEREDITARY DESCENT | 70 |
| CONCEPTION | 76, |
| PREGNANCY | 83 |
| PREMATURE BIRTHS | 89 |
| TABLE FOR CALCULATING THE DURATION OF PREGNANCY | 92 |
| MONTHLY CONCEPTION AND BARREN PERIODS | 93 |
| PROGRESS OF THE EMBRYO | 101 |

BOOK III

GROWTH OF A NEW LIFE

FOLLIES OF PREVENTION

It has been urged that to prevent pregnancy by any means whatever, is an act in opposition to the rule of the Creator. The immorality of such prevention has been set forth in vigorous terms by many of our most eloquent writers. In consideration of the fact that the commonest motive which induces people to seek knowledge on this subject is an unworthy one, we believe that the most that has been said has been offered on thoroughly justifiable grounds.

FOOLISH DREAD OF CHILD-BEARING.

There is a foolish and unreasoning dread of having children, prevalent among many women and some men. Women dread the confinement to the house, the seclusion from the gay round of society, and the engrossing and laborious care of children. Men are apt to be more or less selfish as to their choice in the matter. Sometimes they love children, and care little how many they bring into the world, but offer small help to their over-worked wives. In other cases they are disposed to evade the responsibilities of parentage by reason of a dislike similar to that of their wives for labor and expense. But we think there are few more unlovely sights on God's footstool than that of a childless couple as they approach middle age. They may be very devoted to each other, but it is the devotion of barrenness, impotence or selfishness. It only emphasizes the disgust of the beholder when he sees them obliged to adopt the solace of a poodle dog to take *the place*, forsooth, of children. When will men and women learn that "there is no rose without its thorn"—that even if children do bring the thorns of labor, care and expense to them, these shall be hidden under the roses

of pride and delight, without which middle and old age are seasons of withered neglect and regret? Every married pair should esteem it a glorious privilege to surround themselves with a bevy of happy young lives to keep their own hearts young and in full accord with the constant evolution of new life on *Mother Earth*, who sets them an eternal example. Thus only shall they descend indeed into a "green old age."

However, it is not to be supposed that married people, who are themselves afflicted with certain incurable hereditary diseases, should desire to bring children into a life of suffering and disease. To such, a knowledge of any legitimate and harmless means of restricting conception would be a blessing. It may be said that such people should not marry at all. True; but we often have more to do with mistakes and ignorance in this world than with perfection of theory or practice.

VARIOUS HARMFUL PRACTICES.

Unfortunately, many of the practices resorted to are not only ineffectual, but positively harmful; and as people will, in their ignorance, resort to them, it is better that what is known on the subject by those who have given it study and scientific investigation, should be disseminated. No wise physician, when inquired of professionally, will shun the subject, or turn his patient off so unsatisfactorily enlightened that he will have cause to seek other and less valuable information or employ means known to be actually injurious.

The avoidance of conception is by no means so easy of accomplishment, or so free from harm, as most people seem to suppose; and, indeed, where marital communion is very frequently indulged in, it is doubtful if *any* known method can be steadily employed, without more or less injury resulting. According to one author of acknowledged ability, there is but one positively sure method, one entirely free from danger, and one within the reach of all; that is, to refrain from union altogether.

But the mere idea that the promptings of nature can or should be entirely unheeded, will be revolted against by almost every person as altogether absurd and unreasonable; so far at least as concerns men and women as they are now

constituted. To be sure, there are some rare and peculiar cases where absolute abstinence is practiced, or supposed to be; and, in cases of disease, must be; but where the marital right is entirely abolished, and the lawful husband is deprived from gratifying a natural desire which is a constituent part of his being, the danger of seeking illicit intercourse, or of falling into vicious habits, is so great, that we certainly could rarely recommend entire abstinence as a preventive measure against conception.

Whether prevention is or is not justified, either from a moral or any other standpoint, need not here be discussed, at least so far as it relates to all cases. Different people hold different opinions on this subject, but there is no diversity of opinion in regard to the detestable crime of abortion; yet, in medical practice, cases occasionally arise wherein it is necessary—as in the case of a woman with a deformed pelvis, or who may be otherwise incapable of being delivered of a child at full term—to produce abortion in order to save the mother's life. In these cases it is thought better by physicians to sacrifice the fœtus at an early age, than to let gestation proceed, in which latter case both mother and child must necessarily die.

Of the methods adopted as limiting conception, one that is practiced extensively consists in withdrawal just before emission. As the seminal fluid is indispensable to conception, this is ordinarily successful; that is, providing the withdrawal always takes place in time. The practice, however, is very pernicious; for, independent of its disgusting nature and doubtful security, it is simply ruinous, especially to the male. Satisfaction is thus incomplete, nature is interrupted, and great injury must ensue. It is little different in its effects from masturbation. When emission thus takes place outside, it is slow and incomplete, much more so than within; this is so probably because of the absence of the peculiar influence which the organs of the one sex exert over those of the other. A portion of the semen remains in the male organs, or is discharged but slowly afterwards, giving rise to weakness and irritability of the urethra, which may eventually result in sympathetic inflammation of the urinary organs, inability to retain the urine the usual time, as well as permanent impotence.

It may here be plainly stated that in order to avoid initiating a new life, it is necessary that not the least quantity of semen enter the vagina; otherwise there is always a chance of conception; partial withdrawal will therefore be of no avail and the whole practice is liable to accidental failure. It has been demonstrated that by placing a very minute quantity of semen only within the entrance of the female organ impregnation could be made to follow. The conception of a new human life should not be subject to mere *chance*.

Coverings for the male organ have been widely used for ages. These do away with nearly all gratification, prevent the mutual contact of the surfaces, and often produce such an amount of irritation to the vagina as to cause much pain, discomfort and disease.

Coverings have also been designed to close the mouth of the womb and avoid the entrance therein of the seminal fluid. Yet the most ingenious of all this class of devices is not sure, as a small portion of semen may remain on the walls of the vagina, enough under certain conditions to cause conception.

FOREIGN BODIES ALWAYS IRRITATING.

The presence of any unnatural foreign substances on any of the delicate mucous membranes of the cavities of the body always tends towards an inflammatory process. This is just as much the case in the genitals as in the eye, the ear or elsewhere. Nature provides only for Nature; every change from her laws or customs involves a penalty of suffering and decay not only of power but also of enjoyment.

The use of injections to destroy the germs has in many cases led to serious evils. The solutions used, in order to accomplish the desired end, must have the power of destroying the seminal animalcules (spermatozoa); but in order to kill these, the drugs must be in such strength as to be decidedly injurious to the delicate membranes of the parts. The use of strong injections has been known to produce inflammation of the vagina and womb. Any cold injections are particularly hazardous. The frequent sudden chilling of parts whose natural temperature is of the warmest of the whole body cannot but be vitally injurious. Warm injections are not so dangerous but are less effective. Yet, according to our

best physiologists, it is not advisable to even remove the semen from the vagina after it has once been lodged there; nor is it well to prevent its being deposited there. Nature's evident intention was that it should remain and be absorbed. In all unions whatever, there is reason to believe that the presence of the seminal fluid within the female organ is required, even though impregnation does not take place. Its presence prevents irritation and exhaustion; without it the act is really nothing more than a species of masturbation, injurious and hurtful to both sexes.

Thus it is seen that any method of restriction which interferes in any way with the entrance of the semen within the vagina, or that removes it therefrom after it has once found lodgment, is attended with more or less harm to both male and female. We are therefore irresistibly led to the conclusion that any of the practices commonly resorted to are not free from the most dangerous and harmful consequences; that such avoidance is by no means simple or easy of accomplishment; that the cases where any of these means are justifiable and avoidable are few and far between; and that where they are permitted, the individuals should be prepared to practice a considerable degree of continence, and undergo much sacrifice of pleasure.

THE ONLY CHASTE PROCEDURE.

There is a certain period, in the interval of the menstrual discharges, during which communion may take place without injury and without conception. Impregnation may be avoided by simply refraining from union except for this particular number of days, and there will be no evasion of natural intercourse, no resort to disgusting practices, nothing degrading, except possibly in the view of those who maintain the reform of entire abstinence.

Respecting the time during which conception may take place in the human female, the following facts have been established beyond a doubt. In the first place, the Graafian vesicle, which contains the egg in the ovary, enlarges while the menstrual discharge is taking place, and bursts open to let the egg escape, usually on the first day after the flow ceases; in some cases, however, the egg may not escape until the second, third, but rarely, if ever, later than the

fourth day. The egg then passes down through the Fallopian tube into the womb, occupying from two to six days in its transit. If it does not leave the ovary until four days after the flow has ceased, and occupies six days in transit, it will have reached the womb ten days after the cessation of the menses. The time that it remains in the womb varies also from two to \approx days, when, if it is not impregnated, it passes down through the vagina from the body. After the egg has passed from the body, conception is not possible until after the next menstrual flow. It may therefore be stated, as a rule, that during the sixteen days after the cessation of the flow, conception is possible; but after this time it is impossible. Sixteen days is put down as a safe limit; but in most cases the period during which conception can take place is not so long. Twelve days is usually sufficient.

The period, therefore, from after the sixteenth to within three days of the following menstrual discharge, a period of less than a week, is one of almost absolute safety. We say till within three days of the next menstruation, from the fact that the seminal fluid, if it is allowed to enter the vagina too near the approaching flow, may be retained there alive till the egg leaves the ovary, and in that way impregnation might follow. Impregnation would rarely occur if the period was extended to from the twelfth day after menstruation close up to one day before it began again.

The above is the only method (and it is no secret to a great many people) by which conception can be limited, without the employment of such means as involve danger and serious evils.

IMPOTENCE AND STERILITY.

The causes of unfruitful marriages are numerous and varied. In one couple, sterility may arise from the mutual coldness of husband and wife; in another, from an opposite state, a mutual intensity of desires; in still another couple it may be caused by some apparent want of adaptability in one for the other.

Among the many other causes are spermatorrhœa in the male, leucorrhœa in the female, excessive sexual indulgence, masturbation, irregular menstruation, syphilis, mumps and wasting away (atrophy) of the testicles, hydrocele, stricture of the urethra, smallness of the mouth of the womb, an imperfection in the quality of the semen, general debility, obesity, weakness of the womb, displacement of the womb, tumors or other abnormal growths in the vagina and womb, congestion or inflammation of the ovaries, various affections of the Fallopian tubes, numerous moral and mental causes, and, in rare cases, malformation of the genital organs.

Individuals afflicted in such a manner as to be entirely unfitted for the duties of married life, and knowing themselves to be so, are guilty of a serious offense in smuggling themselves within its pale. A man or woman should not, however, abandon all hope of matrimony, on account of certain peculiarities of organization or conditions of the genital organs, until a skillful and trustworthy physician has been consulted. Many individuals have had these disabilities removed, when, in their own opinion, their condition was most hopeless.

The great cause of sterility is debility or weakness on the part of the male or female, or both. In most cases this state of debilitation is artificial, the result of exhausting labor, excessive indulgence, libertinism, secret habits, and, in fact, any of the numerous conditions which are productive of physical weakness or debility. In this manner spermator-

rhœa, or excessive loss of the semen, acts as a frequent cause, though, besides the general debility it induces, the organs themselves are very much weakened and disordered.

NAPOLEON AND JOSEPHINE.

A certain adaptation between the male and female has been regarded as necessary to conception, consisting of some mysterious influence which one sex exerts over the other, neither one, however, being essentially impotent or sterile. The husband may impregnate one wife and not another; and the wife will conceive by one husband and not another. In the marriage of Napoleon Bonaparte and Josephine, no children were born; but after he had separated from the Empress and wedded Maria Louisa of Austria, an heir soon came. Yet Josephine had children by Beauharnais, her previous husband. But as all is not known as to the physical condition of Josephine during her second marriage, it cannot be assumed that mere lack of adaptability was the cause of unfruitfulness between them. There may have been some cause that history has not recorded, or unknown to the state of medical science of those days. There are doubtless many cases of apparently causeless unfruitfulness in marriage that even physicians, with a knowledge of all apparent conditions in the parties, cannot explain; but when, as elsewhere related in this volume, impregnation by artificial means is successfully practiced, it is useless to attribute barrenness to purely psychological or adaptative influences.

Over-indulgence in intercourse is sometimes the cause of barrenness; this is usually puzzling to the interested parties, inasmuch as the practices which, in their opinion, should be the source of a numerous progeny, have the very opposite effect. By greatly moderating their ardor, this defect may be remedied.

When not depending on imperfect development, or on malformation, there are few causes of barrenness but what can be removed. In the female, sterility most frequently depends upon a weakness or irritability either in the ovaries or the womb, and anything having a strengthening effect upon either organ will remove the disability.

It is well to recollect that there is a distinction made be-

tween *impotence* and *sterility*. Strictly speaking, *impotence* is a loss of the power to engage in communion, either from some imperfection in the male organs—most commonly in the form of the penis—or from lack of sufficient sexual vigor to produce and maintain erection; yet he may have the power of secreting semen. *Sterility* is a total loss of capacity in the reproduction of the species. Impotence is common to men; sterility to women.

MENTAL AND MORAL CAUSES.

Impotence from mental or moral causes is frequent in men, especially in those but recently married. This form of impotence is chiefly confined to the intelligent and cultivated, the coarse and ignorant rarely suffering from it. In very intelligent men, there may be a lack of power simply from a highly nervous organization, there being no real incapacity in the sexual organs. All depressing conditions of the mind; the fear of not succeeding, disgust, dislike, timidity, shame, hatred, jealousy, terror, and sudden surprise; these all act most powerfully upon highly nervous and susceptible individuals, and especially so, as we have before mentioned, on young, newly married men. Cases are reported of certain individuals who were so alarmed, and so wild with consternation at their supposed permanent condition of impotence, that in sheer desperation they destroyed themselves. In these cases there was no real loss of power, no actual impotence, no trouble in the organ itself; and had a physician been consulted, who would have allayed fear by stating the real nature of the case, and thus restored confidence, all trouble would have been overcome.

When there is no physical cause for impotence, and when it is merely nervous, whatever affects favorably the nervous system tends to cure the disability. This fact was apparently well understood in ancient times, as all the charms, amulets, potions and love powders, which we read about, attest. Acting upon the imagination, and with the assurance that a certain thing would have the desired effect, the physicians and priests of early times often were successful by merely inspiring implicit confidence. The power of the imagination over certain maladies is thoroughly understood at this day and time; it is by no means confined, however,

to the organs of generation and to impotence, and this may account, in part, for the "wonderful cures" we sometimes hear of, performed by quacks and charlatans, after all legitimate means and tested remedies had failed.

INFLUENCE OF THE NERVOUS SYSTEM.

The nervous system has so greatly to do with all the functions of body and mind, and especially with the reproductive organs, that any derangement of the nerves is quite sure to be manifested by deficiency or loss of generative power. In such case, it avails naught to attempt to force the procreative members to action, while nothing is done for the nervous system. Stimulants may be taken to spur them up, but nothing can be gained until, by rest, change of scene and occupation, and the use of tonics and nourishing diet, the nerves may be toned up to their natural strength. It is by its exhaustive effects on the nervous system that excesses bring on impotence; to be sure, the organs themselves are weakened in these cases; but the chief trouble lies in the great nervous organization; the genitals not only suffer, but all the other members of the body are more or less affected. Self-abuse, as a cause of impotence, acts through its exhausting effects on the nerve centers. It is even more prostrating than excessive marital indulgence. The after evils arising from masturbation are practically irremediable. We have tried to make this plain in our chapter on *THE SOLITARY VICE*; but we here again emphasize it. Repentance for this crime always comes too late.

Stricture of the urethra is a frequent cause of sterility, more so than is generally supposed; the contraction of the urethra prevents the natural ejection of the semen, and in this way prevents impregnation. Blows, bruises, various injuries to the testicles, and, in rare cases, extreme narrowness of the vagina, all act as causes of sterility. Among other evil conditions which produce derangements of the female organs of generation we must not fail to mention tight lacing.

THE TERRIBLE EFFECTS OF SYPHILIS.

Last, but not least, syphilis, by its deleterious effects upon man, may cause sterility in woman by producing frequent

and habitual miscarriages. Many women habitually miscarry through no fault of their own, but because of some imperfection of the seminal fluid. Syphilis may be apparently entirely eradicated from a man's system; yet the woman who conceives by him will almost invariably miscarry. It is doubtless a fortunate thing that these miscarriages occur; fortunate for the unborn babe, at least; for even though the syphilis may not be manifested in either father or mother at the time, the child will nevertheless hardly fail to evince some form of the disease during its life. Mankind has but few enemies in the form of disease so relentless, so formidable and so persistent as syphilis; and no family or its descendants are safe into which it has once entered.

Different remedies are used in different parts of the world for the purpose of stimulating the generative organs and removing sterility. In the first place, cantharides (Spanish flies), has always held a prominent position as a medicine of this character. The popular belief, however, as regards its exciting effects upon the organs is without foundation in fact; at least, cantharides has not the properties so commonly attributed to it; to be sure, if taken in poisonous doses, it will cause great irritability of the bladder and the neighboring parts, and in some cases inflammation; but as for its being an *aphrodisiac* (a term applied to medicines that produce amateness) it certainly does not rank high in that class of drugs.

POPULAR NOTIONS REGARDING DIET.

Certain articles of diet are regarded as having a tendency to increase amatory propensities and capacity, among which may be mentioned oysters, eggs, calves' feet jelly, shell fish, peaches, hemp seed, figs, dandelion, carrots, water-cresses, etc.; while these articles have, in our opinion, no specific influence over the generative organs, they may still be regarded as incentives to amative feelings. They probably act in this way chiefly through their general nutritive principles. It is said that the females of some countries swallow flies, ants, spiders, crickets, frogs, and such like delicacies, to promote fecundity; and in Spain they sip the dew from the olive leaf for the same purpose.

The established remedies used for their stimulating effects

upon the organs of reproduction are cannabis Indica, ergot, phosphorus, coffee, tea, ether, alcoholic stimulants, aromatics, various spices, and many different scents and odors. These, and other agents, when properly used, have undoubted influence, but their successful administration requires an extensive and intimate knowledge of their properties and effects under all conditions, for there are few but what are capable of producing irreparable mischief if improperly employed.

We give the two following prescriptions from Professor Bartholow, as having aphrodisiac properties, and as being invaluable in certain cases where there is a lack of procreative power: Ergotin (aqueous extract) twenty grains; sanguinaria, two grains; make into twenty pills; dose, one three times a day. Or: Tincture of sanguinaria, three fluidrachms; fluid extract of stillingia, five fluidrachms; dose, fifteen drops in water three times a day. The following, from Dr. H. C. Wood, has been very successful in speedily curing spermatorrhœa, and for sterility depending on that affection it is heartily recommended: Tincture of cantharides, two drachms; tincture of chloride of iron, six drachms; dose, twenty drops in water three times a day.

As it is one of the first duties of the human race to increase and multiply, the man who leaves this world without having obeyed the injunction of his Creator on this point, can scarcely be said to have fulfilled one great end of his existence. All men who are not evidently of monstrous conformation, or who have not been seriously injured by artificial means, are surely equal to the task of reproduction. There is really no such thing as natural sterility in natural men and women. The causes which are supposed to render people barren or unfruitful can in almost every instance be removed. Whatever the condition or malady may be we should first attempt to ascertain and treat the cause.

MARITAL VIGOR AND THE GENERAL HEALTH.

Very frequently, a deficiency or loss of power may be obviated by an observation of very simple rules. It is of the first importance that the general health be up to the normal standard, and the various functions of the different organs of the body be properly performed. When the general

health fails, the procreative organs are usually among the first to suffer. A good stomach and a healthy digestion will be attended, as a rule, with full vigor. It is also important, as a means of generative power, that the bowels perform their office with regularity. Constipation on the one hand, or diarrhea on the other, decidedly tend to impair these functions.

The urinary organs, by their neighborhood, of course exert a powerful influence over the reproductive system. If the kidneys or bladder be effected, the genital organs are necessarily weakened; and the urine, by its irritating effects upon the urethra, will in many cases cause much excitement, and sometimes spermatorrhœa.

It has been conclusively shown that many cases of excessive excitement may be easily subdued by muscular exercise. When there is a deficiency of local strength it is necessary to husband the general strength. The controlling influence which the muscular system holds over the sexual may be exercised for the correction of either condition of surplus or deficiency of marital vigor.

The mind holds the same relation to the generative system, and may be exercised with a view to having the same effects, as in case of the muscular system. It is therefore evident that those who wish to preserve their procreative functions should, as near as possible, avoid extremes. They should endeavor to maintain a happy medium, exercising both mind and body sufficiently for health, happiness and utility, striving in all cases to preserve both equanimity of mind and tranquility of body.

HEREDITARY DESCENT.

The general theory of hereditary transmission of qualities from parent to child has been much written on. It is as old as the hills, and more or less familiar to every one, either through observation, books or experience. The received opinion is that every child bears in face, form or mind, a distinct or mixed resemblance to either or both parents. Sometimes one parent will predominate in face, the other in form; or one will prevail in mind, the other in the general physical formation; or the mutual resemblance may be so confused as to obliterate any distinct likeness to either.

It is claimed by some authors, with much show of reason, that through the power of hereditary descent the human being of the future will be a vast improvement on that of the present. When marriage is based on a better knowledge of physiology and the laws of natural selection; when it is not so much a mere matter of chance as is it now, we may certainly look for better things. It is to be devoutly hoped that, some day, procreation will be made a science in the human species, as breeding now is in the lower animals. The striking contrast exhibited between the uncared for, ill-bred, common domestic animal, and the thorough-bred of the same species, is a convincing and overwhelming proof of what can be done in the development and improvement of animals of our own kind. There is one important and very significant truth which man is too apt to forget; and that is that he is himself, physiologically speaking, an animal, and in many instances a very poor specimen at that. There is not the least doubt that by continued careful training, selection and transmission, improvement might go on almost indefinitely; it might be carried on at least to the production of human beings as far above the highest yet known as the present exceed the common brute.

The human brain is even more susceptible of impres-

sions, and capable of greater improvement by training and education, than that of any other animal; hereditary descent in more marked in the human species; it is, therefore, only reasonable to suppose that when men devote the same attention, the same care, and the same laws to their own race, as they now do to the lower animals, human beings will be borne immeasurably more perfect both in body and mind than many would be willing to believe.

TRANSMISSION OF DISEASE.

It is probably true that this law, as it now affects humanity, more readily transmits disease, disordered minds and vicious proclivities, than the good qualities of mind and body. Of the numerous diseases, handed down through succeeding generations, may be mentioned syphilis, scrofula, cancer, consumption, and various skin diseases; a vast variety of nervous maladies and brain disorders; very many forms of insanity afflict poor humanity by inheritance. Crime also, in all its widely varied forms, is transmitted regularly down from generation to generation, yielding here a murderer, there a harlot, and everywhere thieves, cheats and monsters of all kinds of vice. The preacher and physician have cause, indeed, to summon their every resource in contending with such cases. Hereditary vice and disease can hardly be conquered by medicines and preaching only. While the spirit of the age is onward, man is culpably slow in directing his thoughts and attention toward the improvement of his own species, and toward that great cause of human woe, *ill-assorted marriages*.

Nature, however, kindly counteracts, to a great extent, the disastrous effects of man's gross disregard of the law of transmission, by a gradual weeding out, as it were, of the weaker and more imperfectly developed human beings. When a certain stock becomes too much degenerated, it ceases to exist. It cannot go on indefinitely in a long line of physical and mental infirmity; it is not only crowded out by the stronger and more perfectly developed, but becomes extinct through its own inherent weakness. We see but few examples of true hereditary disease in the lower animal creation. While animals may deteriorate, and certain uncared-for stocks may retrograde, there are few, if any, in-

stances of the hereditary transmission of disease. Among them, sickness and disease are rarely carried along from one generation to another. The wild animal that unfortunately falls sick or is stricken down from wounds, is not nursed and cared for; there are no asylums or hospitals among them for the sick and wounded; with them, to become disabled means to die. The strong and healthy exterminate the infirm, the disabled and the sick.

DARWIN'S THEORY.

This law of Nature's, while apparently cruel, as *especially* applied, is beneficent in its *general* application. It is Darwin's theory of "the survival of the fittest." Its operation may be seen in the vegetable as well as in the animal kingdom. In the forest, the strongest and hardiest trees always smother and kill off the more tender. Some of the nations of ancient times so regulated propagation as to raise only healthy and perfect children. The Spartans eliminated all the puny and deformed, and perpetuated the strong and healthy. A certain African tribe was famous for the strength and superior development of its men and women. The cause was very simple, as explained by its chief: for as the weak and infirm were always carefully picked out and sold into slavery, none but the strong and healthy remained, and health and strength were alone transmitted to the offspring.

We do not advocate that civilized man, with his superior mental, moral and religious attributes, should copy the wild beasts in exterminating the weak, nor the savage in his heartless cruelty; but we certainly question the right of the maimed, the malformed, the diseased, the feeble and mentally unsound, to marry and perpetuate their bodily deformity and mental obliquity.

Or who complain the son is ill at ease

When his lewd father gave the dire disease?—*Pope.*

As for the cases where special features of both body and mind are transmitted from parent to child, they are numerous and interesting. The transmission of stature is quite frequently observed; and a noted instance is that related of the father of Frederick the Great, in his ingenious effort to form a regiment of giants. This celebrated king would not allow any of the soldiers of his body-guard, who were all of

great stature, to marry a woman unless near the same size. The large nose is a feature that has for a long time prevailed among the Hebrews, as has also the talent for financiering and money-making. Both baldness and an excessive growth of hair are often hereditary. A bearded woman who has been on exhibition in the cities as a Dime Museum attraction is said to have had a daughter with a full beard like that of herself. Albinos appear from time to time in certain families, and the six-fingered or six-toed freak is handed down to succeeding generations. Hare-lip and cleft palate are also sometimes hereditary. These peculiarities originate in a very mysterious manner, for it is rare, indeed, that an accidental or an artificial mutilation is inherited. We find proof of this last fact in the Jews: though for thousands of years they have been subjected to the rite of circumcision, yet every male Hebrew's organs are the same as those of Gentiles.

Though certain characteristics may be handed down to the members in general of some families, yet in many cases they appear only in particular individuals, and may even entirely disappear for one or two generations, and then reappear. The law of hereditary descent has operated in many prominent families whose names have illumined the pages of history, and also in others whose names have become conspicuous through vice and deeds the reverse of heroic. We find those to whom was given heroism, intelligence, capacity and true nobility, and others to whom came selfishness, bigotry, cruelty and imbecility as a heritage.

INHERITED VIRTUES AND CHARACTERISTICS.

The ancestors of George Washington, the good and brave, were people of great intelligence, worth and purity of mind; his mother was conspicuous in her time for piety and true Christian charity; while his father was a man of sterling integrity, one of nature's noblemen. The father and mother of Lord Francis Bacon were both eminent for their great intellectual powers and literary capabilities; she was particularly distinguished for her literary genius, he for depth and power of mind. Bacon himself, though not an upright judge, was a wise philosopher, a brilliant literary light, and the possessor of a wonderful stock of knowledge

and erudition. Lord Byron, in whom flashed the sublime spark of poetic genius, inherited both sensuality and the most turbulent of minds from his parents. His paternal ancestor was a reputed sensualist, while the maternal Byron was frequently overcome by the violence of her temper. The ancestors of Patrick Henry, especially the maternal side, were distinguished for their eloquence and fluency as writers and speakers. The Adams family furnishes a familiar instance of the hereditary descent of talent and qualities especially adapted to excel in state affairs. Through five generations they have come prominently forward in the history of our nation, always distinguished by their executive, diplomatic and varied abilities as statesmen. Daniel Webster, Benjamin Franklin, Jonathan Edwards, Henry Clay and many other distinguished Americans were descendants from ancestors equally brilliant, talented and able.

And so it undoubtedly is. Whole families, from generation to generation, are conspicuous for traits, specialities and characteristics, good or bad, pious or profane, honest or dishonest, industrious or indolent, temperate or intemperate, philanthropic or misanthropic, liberal or miserly, ambitious or humble, talented or stupid, heroic or cowardly, vivacious or moody, generous or selfish, garrulous or taciturn, through every phase of human nature. Races and nationalities are likewise recognized by certain mental and physical peculiarities. The Americans are irreverent, enterprising, independent and ingenious; the English proud, domineering and exclusive; the French polished, dexterous, volatile and ambitious; the Germans plodding, domestic and provident; the Irish witty, impulsive and excitable; the Spanish grasping, proud and tyrannical; the Italians artistic, indolent and impassioned; the Turks lustful, voluptuous and devout; and the Russians, though by nature fierce and cruel, have become by long training patient and religious.

THE IMPROVEMENT OF OUR SPECIES.

It would be to no purpose to amplify or enumerate in detail additional instances of the descent in man of special qualities of mind and body. Those questions which most concern society, are such that not only involve the preven-

tion of vice and disease but also the improvement of our species by the perpetuation of none but the finest and most perfect males and females. Nature herself is slowly but constantly at work, by the process of evolution, perfecting and improving humanity; and at some future day, when man is fully awakened to the importance of giving his attention to the subject, the improvement will go on much more rapidly. Even as it now is, the strongest intellects and hardiest bodies endure longer, and when mated, multiply more rapidly; so that the weaker and more feeble are naturally crowded out. The strong bequeath to their offspring strength, and the feeble to theirs weakness, and in the great struggle for existence, in the battle of life, the latter succumb to the former.

We cannot go so far as some physiologists, and regret that there is such a thing as medicine, inasmuch as the sick and feeble, by its administration, are kept alive and permitted to perpetuate their infirmities. Though Nature herself neglects the sick and disabled, and allows them to die, as is seen in the manner in which the stronger of the lower animals harass and exterminate their sick and wounded, still common humanity and philanthropy impel us to alleviate the sufferings of the sick, and, if possible, restore them to health. It is a misfortune, however, that so little regard is paid to the condition on which the enjoyment of the nuptial state and the health of offspring depend. It is also a misfortune that people afflicted with certain maladies and moral defects are allowed to become parents. As long as there are ill-assorted marriages and tainted parents, there will necessarily be tainted children. If, however, the motives to marriage are always right; if the moral and physical conditions on which a happy marriage depends are always fully considered; and if the family transmission of such qualities as tend to improve, strengthen and purify the human species are always encouraged, the human being of the future will be a grand improvement on the human being of to-day.

CONCEPTION.

We have already alluded, under our remarks on wedding tours, to the importance of mental calmness and bodily equipoise and strength in both husband and wife at the time of the conception of a new life. Nine hundred and ninety-nine out of a thousand, if not even, indeed, just about all of mankind, are conceived without intention or plan. Yet it is self-evident that the new being which is initiated at a moment when both father and mother are in a state of exhaustion from a hard day's labor, or when the woman is vexed by unwelcome persistence, can hardly be fortunately endowed. Some care to select an hour when each parent is happily disposed and prepared will certainly be auspicious for the future of the child, and no married pair can owe less to their posterity than to use this care, instead of trusting to *luck* in such an important matter.

THE BEST TIME OF YEAR AND DAY.

The best months for conception are August and September. The advantage of selecting this time is that it will bring the birth of the child about the month of May, when it can enjoy that which is very essential to health and vigor—out-door life. Children born in the fall or winter must necessarily spend the days of their early life within doors, and very often in ill-ventilated apartments, which of course tends to debility. As to the time of day, morning is claimed to be more auspicious than night or day. "The offspring so generated," says one writer, "will be generally robust, healthy and handsome." We are, however, not disposed to attach as much importance to the time of day as to other circumstances. Some writers have advised the contrary—that communion should take place before the night's sleep, on the ground that slumber will recuperate the strength of both parties. This appears to be a wholesome theory, providing

neither of the pair was worn out on retiring. Dr. Cowan, in "The Science of a New Life," says: "Only a clear, bright day, when the sun is shining, should be employed in which to generate the new life, and not the hours of darkness, as though there was something sinful and wrong in the act." But this is rather sentimental than practical, as few men are much at home during daylight. The prime consideration is that the parents shall be in a fresh, healthy and happy condition of body and mind.

WHEN THE NEW LIFE CAN BEGIN.

Women, as a rule, conceive at any time within a period lasting from ten to sixteen days after the cessation of each monthly flow, as, during this time, the egg may not have passed from the body; but immediately after menstruation she is peculiarly liable to conceive, owing to the fact that at this time the mouth of the womb is less exactly closed than usual.

Can a new life be initiated during sleep or stupor, without any knowledge of the fact on woman's part? This has arisen as a legal question in more than one noted court trial. It has, however, been decided in the affirmative. It is believed that there are states of profound stupor caused by certain diseases, during which impregnation may occur without the person's knowledge. This could hardly be the case with virgins, however, owing to the great difficulty of the first connection. But under the action of stupefying drugs even this might be possible. No knowledge or feeling whatever on the part of the woman is necessary to conception. It was formerly believed by most medical men, and still is by some, that whenever impregnation occurred it proved consent on her part. But many cases are now mentioned by different authors as proof that conception may follow when the woman is unconscious.

The above physiological facts might not be given space in a volume like this, except as they may be of value to some in cases where difficulties may arise as well as the legal question above alluded to. When a yearning for children exists, information on these matters may become of intense interest.

OVERCOMING DIFFICULTIES.

Dr. Hollick reports in his work, "Origin of Life," that there have been cases in which, owing to the small size of the wife's vagina, it had been found impossible to consummate the marriage. In such cases the nervous fear of the woman, combined with the natural dread of pain, often resulted in the slightest attempt at coition throwing her into convulsions. Dr. Hollick was accustomed to advise that such ladies be placed under the influence of chloroform until unconsciousness was produced, and the experiments were perfectly successful, children resulting; showing that consciousness of the act was unnecessary to conception. After such accomplishment of commerce, the administration of anæsthetic again usually proved needless.

A NEW LIFE OUTSIDE OF THE WOMB.

It sometimes happens that conception takes place *outside* the womb. The fœtus may be developed in some part of the abdomen; in the tubes leading to the ovaries; or upon the ovary itself. These cases are called *extra uterine pregnancy*. It is not necessary for the development of the egg that it should be inside the womb; though it will never form into a perfect human being except in the womb, it will nevertheless develop, if impregnated, wherever it can attach itself. The supposed cause of extra uterine conception is that the egg becomes impregnated by the seminal germ before it reaches the womb, while still in the Fallopian tube, and that by some abnormal action it is then carried in an opposite direction from its usual course; it may return to the ovary, or be carried entirely from the tube into the abdominal cavity. The fœtus developed in this extraordinary way cannot, of course, be delivered from the mother in the regular manner; but must be either removed by a surgical operation, or left to nature. The usual result is that in which it develops till the ordinary time, when labor pains come on, decay then commences, an abscess is formed, and the remains of the fœtus work through the opening. If the woman does not immediately die from the effects of this process the wound may heal and complete recovery will follow. In some cases, instead of decaying, the fœtus will become callous, and thus, in the form of a hard tumor, remain in its

position indefinitely, or for a lifetime. Cases are reported of women carrying tumors of this kind for years without very serious results. Some authorities contend that the fetus of an extra-uterine pregnancy occasionally entirely disappears by absorption. When the conception is in the Fallopian tube, it is seldom carried longer than two months, in the ovaries not more than six months, and when in the abdomen it may be carried for almost any length of time. Strange to say, the woman may enjoy good health while carrying a child within her in this manner.

ARTIFICIAL AID.

It may not be generally known that union is not essential to impregnation; it is possible for conception to occur without congress. All that is necessary is that seminal animalcules enter the womb and unite there with the egg or ovum. It is not essential that the semen be introduced through the medium of the male organ, as it has been demonstrated repeatedly that by means of a syringe and freshly obtained and healthy semen, impregnation can be made to follow by its careful introduction. There are physicians in France who make a specialty of "artificial impregnation," as it is called, and produce children to otherwise childless couples, being successful in many instances in supplying them as they are desired.

In communion the highest point reached is termed the *orgasm*. Its duration is short, being over almost immediately the flow of semen is ended, usually within but a few seconds, and is coincident with the termination of excitement and congestion. This experience is followed by some languor or exhaustion of variable degree. In the female, when the orgasm is experienced, though it does not always occur, it is much the same experience as in the opposite sex, but the after exhaustion is not usually as great. The orgasm in the female is not caused by an expulsion of fluid, as in the male, but there is a marked increase of mucous secretion in the vagina at the time, which is regarded by the uninformed as a species of semen, though in reality it is not, having nothing whatever to do with conception, but being chiefly for purposes of lubrication.

INFLUENCE OF THE BRAIN AND IMAGINATION.

That the brain has a marked influence over the generative powers is thoroughly established, both by observation and experiments. Phrenologists affirm that only a particular part exercises that power; namely, the cerebellum, or "little brain," as it is sometimes called. The locations of organs by phrenologists are not now accepted by medical science; but many cases have been related wherein an injury to some part of the brain has been followed by impotence, a complete loss of desire, a wasting of the testicles, the general health remaining almost entirely unaffected. Many soldiers who have been wounded in the head have lost all desire and power to exercise the generative functions, although otherwise in good health. Loss of sexual power of course does not always follow these injuries, for the genitals are sometimes not affected at all; but the other functions are impaired instead, as in some cases there is loss of sight, in others loss of hearing, and in still others paralysis may follow.

The imagination likewise exercises a peculiar and remarkable influence over the marital instinct. It has been shown that mental impressions can not only engender or destroy such desires, but that the actual growth of the organs can be increased or retarded by the same means. Men whose genital organs have been only imperfectly developed, and whose desires were entirely wanting, have suddenly changed both physically and mentally for the better by the proper impression being made upon their mind by seeing some one of the opposite sex who was exactly adapted to their taste.

Many men, and women too, after marriage discover something in their life-partners which entirely quenches marital desire. This is often true of young women who marry old men or men who have led licentious lives, who exhibit in their persons the results of decrepitude or debauchery.

"MOTHER'S MARKS."

The effect of the imagination in the mother upon the child before birth, is well known. There is hardly any one but has known of or seen very remarkable instances where the child has become peculiarly marked as the result of some strange impressions on the mind of the mother. These marks

often resemble some object making the impressions ; among many cases may be mentioned that of a lady who had a child covered with hair, with hands shaped very much like the paws of a bear, and which she attributed to having often seen the picture of John the Baptist clothed in a bear's skin. The familiar marks observed on the skins of certain individuals, of different colors, and known by the name of "mother's marks," are attributed to various causes. In many instances they are supposed to have been produced by the mother having longed for some particular things while pregnant.

In whatever manner the marks are produced, it is a well known fact that the quality of the mother's blood is very much affected by the state of the mind and the various emotions experienced ; and as the child must mainly be formed from this blood, its condition is of great consequence to the unborn infant. Joy and a cheerful state of the mind make the blood rich and pure by accelerating its circulation and thus increasing its nutritive properties. Grief and despondency, on the other hand, cause it to become more or less thin and watery, on account of its circulation being very sluggish ; its nutritive properties are, consequently, decreased.

SEX AT WILL.

The question as to the possibility of producing the sexes at will, has been discussed with a great deal of interest by different writers and investigators. One of the first views entertained was that the husband had the power of producing either sex, inasmuch as the seed from the right side produced the male, and from the left the female. Another theory was advanced in regard to the ovaries of the female, it being set forth that the eggs from the right produced boys, and those from the left girls. It was claimed that by lying on the right side, during coition, the issue would be male, and on the left, female. These theories are absurd. It has also been urged that the stronger parent exerts the greatest impression ; that where the father is strong and the mother feeble, the issue is more apt to be a boy, and in the reverse, a girl. It has by some been maintained that the oldest parent somewhat influences the sex ; that where the father is older than the mother, males predominate in offspring.

However, the theory of the cause of sex according to Dr. Hollick and others, has been most advocated of all. It is claimed that sex developed from any egg depends upon the stage of ripeness of that egg when impregnated; that is, the egg of the human female is at first only partially developed, as it leaves the ovaries; but as it descends into and remains in the womb, it ripens more perfectly. If it becomes impregnated in its imperfect state, the egg will develop into a girl; but if impregnation occurs later, when the egg is more perfectly developed, the result is a boy. His rule, therefore, to insure either sex, is as follows: To produce a girl, intercourse should be indulged in only on the last day of the monthly flow, or during the two first days that follow its stoppage. To produce a boy, intercourse should not take place till the sixth day after the stoppage of the menses. Stock breeders generally endorse this plan.

Another theory, quite new, has lately been broached, which has firm believers among live-stock breeders who have tested it, and applies to human pairs as well. Many testimonials to its success have been given. It is as follows: If a male child is desired, the woman should be somewhat active on her feet, during the day previous, and communion should take place rather early after retiring. Then let her keep quiet during the rest of the night. On the other hand, if a female child is desired, the mother should remain very quiet and undisturbed all night, intercourse occur the last thing before rising, and activity follow during the day. It will be realized as quite possible for either husband or wife to control production of sex by this method, though more within the power of the wife.

To justify the above practice, curious and interesting references are made to Bible authority: Gen. 19; 33 to 38; Gen. 30; 15 to 17; 2nd Sam. 11; 3 to 5, and also verse 27. It is likewise claimed to be corroborated by the well known historical fact that in time of and after a great war, more boys are always born in a nation than girls; owing to the natural prompt behavior of the soldiers returned to their wives.

It will be seen that it is practicable to *combine* several theories in practice. Methods can be easily tested on live-stock.

PREGNANCY.

SIGNS AND DURATION.

One of the first signs of pregnancy, though not an invariable one, is that of the cessation of the menses. When a lady is expecting to be in the family way, she awaits anxiously the time when her next menstrual flow should appear, and its failure to put in an appearance is taken as presumptive evidence that conception has taken place. As a sign, it is not, however, to be depended upon by itself alone. Ceasing to be unwell may arise from various disorders of the womb or other organs of the body. In the great majority of cases, however, the menses cease to flow immediately conception occurs.

There are many ladies who, having already borne children, are very expert in arriving at a knowledge of their condition, by sensations of a peculiar nature, which in their own cases they are always able to recognize. Probably one of the most peculiar of these signs is an increase in the size of the neck, which often occurs in a few days, and is relied on so implicitly by some women, that by keeping an exact measurement they are able to tell at once when they become pregnant. Such signs as make their appearance at any time from three days after, and within three months, as numbness of the hands and feet, huskiness of the throat, a sinking sensation at the heart, and certain marked changes in the face, may be absent or present, as the case may be, and are not to be depended upon.

MORNING SICKNESS.

Disturbance of the digestive functions, known commonly as *morning sickness*, is regarded as one of the most reliable early symptoms. If it appears at all, it generally occurs within three weeks, and may present itself within a few

days after conception. This derangement of the stomach is manifested in various ways. Frequently there is great loathing of food, nausea of a most distressing character, and vomiting of anything taken into the stomach, particularly in the morning. There is also in some cases a certain longing for unusual articles of food, and when not gratified in her fancies, the individual exhibits such disappointment that it is certainly better to indulge her vagaries, when not positively injurious. Usually all disturbances of the stomach disappear by the third or fourth month, the appetite becomes regular and the digestion good, and the whole body takes on an appearance of bloom and health.

OTHER SIGNS.

Owing to the direct and intimate sympathy existing between the uterus and breasts, pregnancy is generally indicated by changes in the latter organs. They may become somewhat painful and swollen, the nipple is elevated, and the areola, or circle around it, assumes a dark brown hue, and is dotted with small tubercles. The nipple enlarges, and as pregnancy advances milk can be forced from it by pressure. Milk in the breasts, however minute in quantity, is a pretty sure sign, especially in a first pregnancy. Great importance is attached to the increased darkness in the color of the circle around the nipple, and it is a sign which rarely fails; like all presumptive signs of early pregnancy, though, it can hardly be relied upon alone. The careful observer will not and should not base an opinion upon one sign alone. A physician called upon to pronounce in certain cases of supposed pregnancy is very sure to take into consideration all symptoms, and by so doing, seldom, if ever, makes a mistake. A blunder in cases of this nature would be damaging to the physician, and humiliating to the individual interested. Besides the changes in the nipple and the enlargement of the breast, the veins look more blue, and the whole substance is firmer and more knotty to the touch.

Enlargement of the abdomen, though an invariable accompaniment of pregnancy, cannot positively be relied upon as a symptom, as other causes may produce it; besides, in many cases the development of the abdomen is not observed till rather late.

Cessation of the menstrual flow, morning sickness, alterations in the appearance of the breast and nipple, development of the abdomen, and some few minor sensations and changes, are then about all the early signs of importance; these all usually appear within the first three months, and, while not positive, they are strongly presumptive of pregnancy.

About the third month enlargement of the abdomen takes place, though before this time women who are not very fleshy can, by pressing the fingers on the lower part of the abdomen, feel the enlarged womb in the shape of a hard, round substance, very near the size of an orange. This is the more easily done by lying down on the back, and relaxing the abdominal muscles by raising the shoulders and drawing up the knees. From the third till the eighth month the abdomen continues to enlarge; but, as previously mentioned, much importance cannot be attached to this symptom alone, as many cases of enlargement are due to tumors, dropsy, and ovarian disease. A physician of any experience, however, should be able to distinguish the abdominal enlargement of pregnancy, from that caused by other conditions.

QUICKENING.

The first unequivocal sign observed by the mother is that known as *quickenings*, which occurs usually about the fourth month. This is the period when the fœtus becomes large enough to make its motions first *felt*; though the child has being and soul from the first day of its conception, its first token of animation is noticed at this time. It was formerly thought that the child was not alive before quickening, and that its destruction before this time was not such a heinous crime, and a heavy and damnable sin, as that of abortion after the movements occur. But, assuredly, no man can say that at one period there is no animation, and at another specified time life begins. As arranged by some of the older authors, a birth of the fœtus six weeks after the conception, was called a *miscarriage*; between that and six months, an *abortion*; and between that and nine months, *premature labor*. The sensation of quickening is said by some ladies, when once experienced, to be never easily mistaken, and is therefore a

very certain symptom. Though at first feeble, after a time the motions become more quick and frequent, and a lady is not only able to recognize her condition, but the very period of her pregnancy.

In the fifth month there is a sign which, if detected, furnishes indubitable evidence of conception, and that is the sound of the child's heart. If the ear be placed on the abdomen over the womb, the beating of the fœtal heart can sometimes be heard quite plainly; and by the use of an instrument called the stethoscope, the sounds can be still more plainly heard. This is a very valuable sign, inasmuch as the presence of the child is not only ascertained, but also its position, and whether there are twins or more.

WILL IT BE A BOY OR A GIRL; OR TWINS?

By the use of the stethoscope, during the three last months of pregnancy, may be ascertained the sex of the fœtus; even without that instrument, the inquirer, if he possess good hearing, may decide this; for science states that the number of beats to the minute of the fœtal male heart is, from 120 to 130; those of a female, from 140 to 150. The ear should be pressed firmly against the abdomen. In the same way, if *two* distinct pulse-beats of different rapidity are made out, *twins* may be suspected; especially if two prominences appear in the shape of the abdomen with some depression between; unusual *size* would be merely corroborative and not alone of particular value for a decision.

Some ladies are afflicted by the appearance of more or less prominent and dark yellowish-brown spots or patches on the face, generally upon the forehead, nose and over the cheek bones. These disappear after the birth.

While before the fifth month there is no one sign that may be depended on with absolute certainty, any person with ordinary powers of observation will have little trouble in distinguishing pregnancy from other conditions that bear more or less resemblance. After the fœtal heart-beat is detected no further difficulty will be experienced, for in that we have a sure sign of pregnancy.

The morning sickness, though a valuable sign, is by no means constant. A number of cases have come under our notice, in which there was not one symptom of stomach de-

rangement. Even in the absence of this early symptom, there will not be much trouble, as a rule, to recognize the true condition, especially if the menses have ceased.

HYSTERICAL SYMPTOMS.

In many cases the one symptom to attract the most attention is the highly disordered state of the nervous system. Some ladies become very fretful and peevish; others are so despondent that a great portion of their time is spent in tears; they mope and cry without apparent cause or provocation, and are unable themselves to give any reason for their low spirits.

The nervous derangements, the changes produced in the mind and feelings of a lady in the family way, are often very remarkable. Individuals who are naturally amiable may become not only fretful, but even violent, so much so as to excite alarm among friends and relatives. Many weep and fret continually, while others are gay and happy. Sometimes their feelings toward their friends undergo a marked change, and those who were before the most beloved, become positively hateful, and *vice versa*; those who are naturally mild-tempered and gentle become irritable and harsh, while others, ordinarily ill-tempered, change to the most amiable, cheerful and serene of beings. These changes, when they occur in connection with other symptoms, furnish strong signs of pregnancy.

HOW TO CALCULATE.

The duration of pregnancy, owing to the fact that conception is usually a chance act, is difficult to fix accurately. As conception may take place immediately after a menstrual flow, or immediately before the succeeding one, or at almost any time between the two periods, the practice of counting from the day of the cessation of the last monthly flow, in order to fix the date when birth may be expected, is necessarily attended with some uncertainty. Were it possible to designate the precise day on which conception takes place, there would be less difficulty in arriving at the exact time that delivery should occur. However, the usual number of days allotted to the duration of pregnancy is *two hundred and eighty, or forty weeks*. While this is the average, there

are undoubtedly cases in which the time is exceeded, or fallen short of, by a few days.

First children are frequently born within less than 280 days; and the fact of a woman giving birth to her first child within a little less than nine months of her marriage, should not necessarily fix upon her the charge of unfaithfulness or bring her virtue into question.

Sunday being a day of more leisure than others in the week, has naturally been the day of the conception of a large proportion of children in Christian nations; it is therefore a like curious and interesting fact, noticed by physicians, but not so well known among the people, that a large proportion of births take place also on or about Sunday, the count of forty weeks then falling on that day again. Therefore, let expectant parents look out for Sundays.

WHAT MAY CONSTITUTE LEGITIMATE BIRTH.

Different countries vary somewhat in their laws affecting the legitimacy of children, though in the main there is not a wide variation. The usual legal time is fixed at nine calendar months, allowing a latitude of a few days on either side. France does not call the legitimacy of a child into question who has been born three hundred days after the death or absence of the legal parent. According to the laws of Scotland, a child is a bastard who is born later than ten calendar months after the absence of the legal husband.

Women about whom there can be no doubt, have gone ten months with child, and cases have been reported of eleven, and even twelve months; but these are of course very exceptional, and about which some doubt might be entertained. On the contrary, there are many well authenticated cases of children born seven months after conception. These varying cases have been the cause of much domestic trouble and even of divorces. The question of the extreme limit has always been an important one, interesting not only the parties concerned and the medical man, but bearing also much legal significance.

It is customary among some women to count from the middle of the month after the appearance of the last menstruation; it is the most usual mode with all, in fact, but taking

into consideration the process of ovulation, the time during which the egg ripens and leaves the ovary, it would appear that the periods most liable to conception, and therefore the safest to count from, are those closely following or preceding menstruation. It is at those times that the germ from the male is most apt to meet with and impregnate the female egg.

An interesting fact connected with pregnancy is that, if it is not brought to a premature close by violence, labor usually commences at what would have been one of the menstrual periods; that is, if a woman passes over the *ninth* month, she will probably go on to the *tenth* month before delivery takes place.

Thin women become plumper during pregnancy; symptoms of poor health often disappear at this time from the lives of many women; Nature seems to gather all her forces to ward off disease and guard both mother and child through the great process; and nothing can be more conducive to the good health of women than occasional child-bearing. We are obliged in such a treatise as this to warn and exhort against evils as well as to show the best paths; but no woman of sense enough to follow the latter should make a bugaboo of any of the various stages of maternity when all the testimony is so overwhelmingly in favor of its healthfulness.

PREMATURE BIRTHS, ETC.

The precise or the earliest period that a child can be brought into the world, and still live, is not determined with any more certainty than the time it may remain in the womb. There is, of course, a great difference in the development of children; yet some may even be delivered a considerable time before the usual end of gestation. One may be as fully developed at six as another is at seven months; and though the common opinion is that it cannot live if born before seven months, many instances are related, on unimpeachable authority, of births at six months and earlier, in which the child lived, grew to maturity, and enjoyed robust health. A remarkable case has been put on record, in which it is affirmed that a child was born on

the 158th day of gestation, or in the middle of the *twenty-third* week after communion. It weighed at birth one pound, and measured eleven inches. The eyelids were closed and did not open till the second day; its nails were rudimentary, the skin was shriveled, and there was scarcely any hair, except a little of reddish color on the back of the head. According to Dr. Barker, of Dumfries, who reported the case, it was wrapped up in a box and placed before the fire, immediately it was born. The child did not suck properly until a month old, and it was nineteen months before it could walk.

A NINETEEN WEEKS' CHILD.

Another wonderful case is given by Dr. Rodman, of a woman who gave birth to a child in the *nineteenth* week of gestation. Premature labor came on in this case in consequence of over-exertion. This infant (a boy) was speedily wiped and wrapped in flannel, with only an opening around his mouth for the admission of air. The vital energies of the child were so deficient that even the cotton in which he was enveloped, together with flannels, were insufficient to preserve the necessary degree of warmth. The mother and two other women, by alternately lying in bed with him, kept him alive for the first two months. It was found in this case that the warmth from the fire did not have the desired effect. During the first week he was fed with toasted bread, boiled with water sweetened, and strained through linen. In the second week, twenty drops of beef tea were added to the small quantities of mother's milk given him, and in a few days after he made exertions to suck. By careful management the child was kept alive until able to sustain life by the breast, when, as in the case of other healthy infants, the secretory and excretory functions were properly performed, and at the age of four months a fair degree of health and strength had been attained. It was not until three weeks after birth that the weight and size of the infant could be ascertained, which was,—length, thirteen inches, weight, one pound and thirteen ounces.

The cases where a child lives when born under seven months are exceedingly rare; but after that age has been reached the chances are, under proper care, much in favor of the child, if well developed. At any rate there are

many cases reported of children born at the expiration of the seventh month, not only surviving through all the perils of babyhood, but reaching mature age and enjoying the average degree of health and strength.

DISASTROUS NATURE OF ABORTIONS, ETC.

The evils attending miscarriages, abortions and premature births are not fully appreciated by many people. It is wickedly unjust to children to bring them into the world before they have gone their full time within Nature's laboratory, or until the Creator's hand has put the finishing touches to the wonderful new life so long building. Such premature children are usually stunted, weakly and inferior in some respects. But the injury to the mother is also great. One miscarriage predisposes to others in the future. The nervous and arterial systems are strained, and the ill effects are never entirely recovered from. First miscarriages are most common about three or four months after marriage, and are usually produced by excessive intercourse and over-exertion. They are always disasters to be dreaded as the beginning of weakness and affections of the womb. On a second and succeeding pregnancies the greatest care has to be observed lest the same calamity occur again at the same period.

If the sensitive, nervous organization of woman needs sympathy at one time more than another, it is certainly during pregnancy. Her peculiar state often makes her sick, qualmish and distressed. She feels as if she was bearing the burden not only for herself, but for a perhaps selfish husband. How much, then, does she not need his repeated assurances of an almost worshipful love and tenderness all through this trying time!

The benefits of a calm, even manner of life, for a woman during this period, are inestimable. The household work, the making of baby's clothes, and all else should be carefully provided for, so that, as the mother's load becomes heavier, hurry and worry will be back out of sight. Many women wait too long, and are found during the last month at the sewing-machine, and running about shopping, expending their strength, which should be husbanded for the approaching confinement.

TABLE FOR CALCULATING THE DURATION OF PREGNANCY.

Directions — Find in the upper horizontal line the date on which the last menstruation ceased; the figure beneath gives the date of expected confinement (280 days).

| | | |
|-------|---|-------|
| Jan. | 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 | |
| Oct. | 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 1 2 3 4 5 6 7 | Nov. |
| Feb. | 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 | |
| Nov. | 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 1 2 3 4 5 | Dec. |
| Mar. | 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 | |
| Dec. | 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 1 2 3 4 5 | Jan. |
| April | 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 | |
| Jan. | 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 1 2 3 4 | Feb. |
| May | 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 | |
| Feb. | 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 1 2 3 4 5 6 7 | March |
| June | 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 | |
| March | 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 1 2 3 4 5 6 | April |
| July | 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 | |
| April | 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 1 2 3 4 5 6 7 | May |
| Aug. | 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 | |
| May | 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 1 2 3 4 5 6 7 | June |
| Sept. | 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 | |
| June | 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 1 2 3 4 5 6 7 | July |
| Oct. | 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 | |
| July | 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 1 2 3 4 5 6 7 | Aug. |
| Nov. | 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 | |
| Aug. | 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 1 2 3 4 5 6 | Sept. |
| Dec. | 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 | |
| Sept. | 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 1 2 3 4 5 6 7 | Oct. |

Illustration—If menstruation ceased Oct. 11, the confinement will take place July 18, or one day earlier if leap year.

MONTHLY CONCEPTION AND BARREN PERIODS.

Interesting to all married women is the question of maternity. Many women wish to become mothers and are absolutely ignorant of the procreative periods, otherwise there would be less barren women today. Some others are unable to accept the responsibility of maternity.

We trust that the publishing of this table will result in the discontinuance of those practices devised to thwart nature, and which is always ruinous to health and happiness.

| MONTHLY PERIOD | | | | CONCEPTION PERIOD | | | BARREN PERIOD | | | | |
|----------------|--------|------|--------|-------------------|--------|------|---------------|------|------------|---------|--------|
| From | Jan. | 1 to | Jan. 4 | From | Jan. | 5 to | Jan. 17 | From | Jan. 18 to | Jan. 23 | |
| " | " | 2 | " 5 | " | " | 6 | " 18 | " | " | 19 | " 24 |
| " | " | 3 | " 6 | " | " | 7 | " 19 | " | " | 20 | " 25 |
| " | " | 4 | " 7 | " | " | 8 | " 20 | " | " | 21 | " 26 |
| " | " | 5 | " 8 | " | " | 9 | " 21 | " | " | 22 | " 27 |
| " | " | 6 | " 9 | " | " | 10 | " 22 | " | " | 23 | " 28 |
| " | " | 7 | " 10 | " | " | 11 | " 23 | " | " | 24 | " 29 |
| " | " | 8 | " 11 | " | " | 12 | " 24 | " | " | 25 | " 30 |
| " | " | 9 | " 12 | " | " | 13 | " 25 | " | " | 26 | " 31 |
| " | " | 10 | " 13 | " | " | 14 | " 26 | " | " | 27 | Feb. 1 |
| " | " | 11 | " 14 | " | " | 15 | " 27 | " | " | 28 | " 2 |
| " | " | 12 | " 15 | " | " | 16 | " 28 | " | " | 29 | " 3 |
| " | " | 13 | " 16 | " | " | 17 | " 29 | " | " | 30 | " 4 |
| " | " | 14 | " 17 | " | " | 18 | " 30 | " | " | 31 | " 5 |
| " | " | 15 | " 18 | " | " | 19 | " 31 | " | Feb. 1 | " | " 6 |
| " | " | 16 | " 19 | " | " | 20 | Feb. 1 | " | " | 2 | " 7 |
| " | " | 17 | " 20 | " | " | 21 | " 2 | " | " | 3 | " 8 |
| " | " | 18 | " 21 | " | " | 22 | " 3 | " | " | 4 | " 9 |
| " | " | 19 | " 22 | " | " | 23 | " 4 | " | " | 5 | " 10 |
| " | " | 20 | " 23 | " | " | 24 | " 5 | " | " | 6 | " 11 |
| " | " | 21 | " 24 | " | " | 25 | " 6 | " | " | 7 | " 12 |
| " | " | 22 | " 25 | " | " | 26 | " 7 | " | " | 8 | " 13 |
| " | " | 23 | " 26 | " | " | 27 | " 8 | " | " | 9 | " 14 |
| " | " | 24 | " 27 | " | " | 28 | " 9 | " | " | 10 | " 15 |
| " | " | 25 | " 28 | " | " | 29 | " 10 | " | " | 11 | " 16 |
| " | " | 26 | " 29 | " | " | 30 | " 11 | " | " | 12 | " 17 |
| " | " | 27 | " 30 | " | " | 31 | " 12 | " | " | 13 | " 18 |
| " | " | 28 | " 31 | " | Feb. 1 | " | " 13 | " | " | 14 | " 19 |
| " | " | 29 | Feb. 1 | " | " | 2 | " 14 | " | " | 15 | " 20 |
| " | " | 30 | " 2 | " | " | 3 | " 15 | " | " | 16 | " 21 |
| " | " | 31 | " 3 | " | " | 4 | " 16 | " | " | 17 | " 22 |
| " | Feb. 1 | " | " 4 | " | " | 5 | " 17 | " | " | 18 | " 23 |
| " | " | 2 | " 5 | " | " | 6 | " 18 | " | " | 19 | " 24 |
| " | " | 3 | " 6 | " | " | 7 | " 19 | " | " | 20 | " 25 |
| " | " | 4 | " 7 | " | " | 8 | " 20 | " | " | 21 | " 26 |
| " | " | 5 | " 8 | " | " | 9 | " 21 | " | " | 22 | " 27 |

| MONTHLY PERIOD | | | | CONCEPTION PERIOD | | | BARREN PERIOD | | |
|----------------|--------|------|--------|-------------------|------------|---------|---------------|------------|---------|
| From | Feb. | 6 to | Feb. 9 | From | Feb. 10 to | Feb. 22 | From | Feb. 23 to | Feb. 28 |
| " | " | 7 " | " 10 | " | " 11 " | " 23 | " | " 24 " | Mar. 1 |
| " | " | 8 " | " 11 | " | " 12 " | " 24 | " | " 25 " | " 2 |
| " | " | 9 " | " 12 | " | " 13 " | " 25 | " | " 26 " | " 3 |
| " | " | 10 " | " 13 | " | " 14 " | " 26 | " | " 27 " | " 4 |
| " | " | 11 " | " 14 | " | " 15 " | " 27 | " | " 28 " | " 5 |
| " | " | 12 " | " 15 | " | " 16 " | " 28 | " | Mar. 1 " | " 6 |
| " | " | 13 " | " 16 | " | " 17 " | Mar. 1 | " | " 2 " | " 7 |
| " | " | 14 " | " 17 | " | " 18 " | " 2 | " | " 3 " | " 8 |
| " | " | 15 " | " 18 | " | " 19 " | " 3 | " | " 4 " | " 9 |
| " | " | 16 " | " 19 | " | " 20 " | " 4 | " | " 5 " | " 10 |
| " | " | 17 " | " 20 | " | " 21 " | " 5 | " | " 6 " | " 11 |
| " | " | 18 " | " 21 | " | " 22 " | " 6 | " | " 7 " | " 12 |
| " | " | 19 " | " 22 | " | " 23 " | " 7 | " | " 8 " | " 13 |
| " | " | 20 " | " 23 | " | " 24 " | " 8 | " | " 9 " | " 14 |
| " | " | 21 " | " 24 | " | " 25 " | " 9 | " | " 10 " | " 15 |
| " | " | 22 " | " 25 | " | " 26 " | " 10 | " | " 11 " | " 16 |
| " | " | 23 " | " 26 | " | " 27 " | " 11 | " | " 12 " | " 17 |
| " | " | 24 " | " 27 | " | " 28 " | " 12 | " | " 13 " | " 18 |
| " | " | 25 " | " 28 | " | Mar. 1 " | " 13 | " | " 14 " | " 19 |
| " | " | 26 " | Mar. 1 | " | " 2 " | " 14 | " | " 15 " | " 20 |
| " | " | 27 " | " 2 | " | " 3 " | " 15 | " | " 16 " | " 21 |
| " | " | 28 " | " 3 | " | " 4 " | " 16 | " | " 17 " | " 22 |
| " | Mar. 1 | " 4 | " 4 | " | " 5 " | " 17 | " | " 18 " | " 23 |
| " | " 2 | " 5 | " 5 | " | " 6 " | " 18 | " | " 19 " | " 24 |
| " | " 3 | " 6 | " 6 | " | " 7 " | " 19 | " | " 20 " | " 25 |
| " | " 4 | " 7 | " 7 | " | " 8 " | " 20 | " | " 21 " | " 26 |
| " | " 5 | " 8 | " 8 | " | " 9 " | " 21 | " | " 22 " | " 27 |
| " | " 6 | " 9 | " 9 | " | " 10 " | " 22 | " | " 23 " | " 28 |
| " | " 7 | " 10 | " 10 | " | " 11 " | " 23 | " | " 24 " | " 29 |
| " | " 8 | " 11 | " 11 | " | " 12 " | " 24 | " | " 25 " | " 30 |
| " | " 9 | " 12 | " 12 | " | " 13 " | " 25 | " | " 26 " | " 31 |
| " | " 10 | " 13 | " 13 | " | " 14 " | " 26 | " | " 27 " | Apr. 1 |
| " | " 11 | " 14 | " 14 | " | " 15 " | " 27 | " | " 28 " | " 2 |
| " | " 12 | " 15 | " 15 | " | " 16 " | " 28 | " | " 29 " | " 3 |
| " | " 13 | " 16 | " 16 | " | " 17 " | " 29 | " | " 30 " | " 4 |
| " | " 14 | " 17 | " 17 | " | " 18 " | " 30 | " | " 31 " | " 5 |
| " | " 15 | " 18 | " 18 | " | " 19 " | " 31 | " | Apr. 1 " | " 6 |
| " | " 16 | " 19 | " 19 | " | " 20 " | Apr. 1 | " | " 2 " | " 7 |
| " | " 17 | " 20 | " 20 | " | " 21 " | " 2 | " | " 3 " | " 8 |
| " | " 18 | " 21 | " 21 | " | " 22 " | " 3 | " | " 4 " | " 9 |
| " | " 19 | " 22 | " 22 | " | " 23 " | " 4 | " | " 5 " | " 10 |
| " | " 20 | " 23 | " 23 | " | " 24 " | " 5 | " | " 6 " | " 11 |
| " | " 21 | " 24 | " 24 | " | " 25 " | " 6 | " | " 7 " | " 12 |
| " | " 22 | " 25 | " 25 | " | " 26 " | " 7 | " | " 8 " | " 13 |
| " | " 23 | " 26 | " 26 | " | " 27 " | " 8 | " | " 9 " | " 14 |
| " | " 24 | " 27 | " 27 | " | " 28 " | " 9 | " | " 10 " | " 15 |
| " | " 25 | " 28 | " 28 | " | " 29 " | " 10 | " | " 11 " | " 16 |
| " | " 26 | " 29 | " 29 | " | " 30 " | " 11 | " | " 12 " | " 17 |
| " | " 27 | " 30 | " 30 | " | " 31 " | " 12 | " | " 13 " | " 18 |
| " | " 28 | " 31 | " 31 | " | Apr. 1 " | " 13 | " | " 14 " | " 19 |

| MONTHLY PERIOD | | | CONCEPTION PERIOD | | | BARREN PERIOD | | |
|----------------|------------|--------|-------------------|-----------|---------|---------------|------------|---------|
| From | Mar. 29 to | Apr. 1 | From | Apr. 2 to | Apr. 14 | From | Apr. 15 to | Apr. 20 |
| " | " | 30 " | " | " | 3 " | " | " | 16 " |
| " | " | 31 " | " | " | 4 " | " | " | 17 " |
| " | Apr. | 1 " | " | " | 5 " | " | " | 18 " |
| " | " | 2 " | " | " | 6 " | " | " | 19 " |
| " | " | 3 " | " | " | 7 " | " | " | 20 " |
| " | " | 4 " | " | " | 8 " | " | " | 21 " |
| " | " | 5 " | " | " | 9 " | " | " | 22 " |
| " | " | 6 " | " | " | 10 " | " | " | 23 " |
| " | " | 7 " | " | " | 11 " | " | " | 24 " |
| " | " | 8 " | " | " | 12 " | " | " | 25 " |
| " | " | 9 " | " | " | 13 " | " | " | 26 " |
| " | " | 10 " | " | " | 14 " | " | " | 27 " |
| " | " | 11 " | " | " | 15 " | " | " | 28 " |
| " | " | 12 " | " | " | 16 " | " | " | 29 " |
| " | " | 13 " | " | " | 17 " | " | " | 30 " |
| " | " | 14 " | " | " | 18 " | " | " | May 1 |
| " | " | 15 " | " | " | 19 " | " | " | 2 |
| " | " | 16 " | " | " | 20 " | " | " | 3 |
| " | " | 17 " | " | " | 21 " | " | " | 4 |
| " | " | 18 " | " | " | 22 " | " | " | 5 |
| " | " | 19 " | " | " | 23 " | " | " | 6 |
| " | " | 20 " | " | " | 24 " | " | " | 7 |
| " | " | 21 " | " | " | 25 " | " | " | 8 |
| " | " | 22 " | " | " | 26 " | " | " | 9 |
| " | " | 23 " | " | " | 27 " | " | " | 10 |
| " | " | 24 " | " | " | 28 " | " | " | 11 |
| " | " | 25 " | " | " | 29 " | " | " | 12 |
| " | " | 26 " | " | " | 30 " | " | " | 13 |
| " | " | 27 " | " | " | May 1 | " | May | 1 |
| " | " | 28 " | " | " | 2 " | " | " | 2 |
| " | " | 29 " | " | " | 3 " | " | " | 3 |
| " | " | 30 " | " | " | 4 " | " | " | 4 |
| " | May | 1 " | " | " | 5 " | " | " | 5 |
| " | " | 2 " | " | " | 6 " | " | " | 6 |
| " | " | 3 " | " | " | 7 " | " | " | 7 |
| " | " | 4 " | " | " | 8 " | " | " | 8 |
| " | " | 5 " | " | " | 9 " | " | " | 9 |
| " | " | 6 " | " | " | 10 " | " | " | 10 |
| " | " | 7 " | " | " | 11 " | " | " | 11 |
| " | " | 8 " | " | " | 12 " | " | " | 12 |
| " | " | 9 " | " | " | 13 " | " | " | 13 |
| " | " | 10 " | " | " | 14 " | " | " | 14 |
| " | " | 11 " | " | " | 15 " | " | " | 15 |
| " | " | 12 " | " | " | 16 " | " | " | 16 |
| " | " | 13 " | " | " | 17 " | " | " | 17 |
| " | " | 14 " | " | " | 18 " | " | " | 18 |
| " | " | 15 " | " | " | 19 " | " | " | 19 |
| " | " | 16 " | " | " | 20 " | " | " | 20 |
| " | " | 17 " | " | " | 21 " | " | " | 21 |
| " | " | 18 " | " | " | 22 " | " | " | 22 |
| " | " | 19 " | " | " | 23 " | " | " | 23 |
| " | " | 20 " | " | " | 24 " | " | " | 24 |
| " | " | 21 " | " | " | 25 " | " | " | 25 |
| " | " | 22 " | " | " | 26 " | " | " | 26 |
| " | " | 23 " | " | " | 27 " | " | " | 27 |
| " | " | 24 " | " | " | 28 " | " | " | 28 |
| " | " | 25 " | " | " | 29 " | " | " | 29 |
| " | " | 26 " | " | " | 30 " | " | " | 30 |
| " | " | 27 " | " | " | May 1 | " | " | 31 |
| " | " | 28 " | " | " | 2 " | " | " | June 1 |
| " | " | 29 " | " | " | 3 " | " | " | 2 |
| " | " | 30 " | " | " | 4 " | " | " | 3 |
| " | May | 1 " | " | " | 5 " | " | " | 4 |
| " | " | 2 " | " | " | 6 " | " | " | 5 |
| " | " | 3 " | " | " | 7 " | " | " | 6 |
| " | " | 4 " | " | " | 8 " | " | " | 7 |
| " | " | 5 " | " | " | 9 " | " | " | 8 |
| " | " | 6 " | " | " | 10 " | " | " | 9 |
| " | " | 7 " | " | " | 11 " | " | " | 10 |
| " | " | 8 " | " | " | 12 " | " | " | 11 |
| " | " | 9 " | " | " | 13 " | " | " | 12 |
| " | " | 10 " | " | " | 14 " | " | " | 13 |
| " | " | 11 " | " | " | 15 " | " | " | 14 |
| " | " | 12 " | " | " | 16 " | " | " | 15 |
| " | " | 13 " | " | " | 17 " | " | " | 16 |
| " | " | 14 " | " | " | 18 " | " | " | 17 |
| " | " | 15 " | " | " | 19 " | " | " | 18 |
| " | " | 16 " | " | " | 20 " | " | " | 19 |
| " | " | 17 " | " | " | 21 " | " | " | 20 |
| " | " | 18 " | " | " | 22 " | " | " | 21 |

| MONTHLY PERIOD | | CONCEPTION PERIOD | | | BARREN PERIOD | | |
|----------------|------------------|-------------------|------------------|------|-------------------|--|--|
| From | May 19 to May 22 | From | May 23 to June 4 | From | June 5 to June 10 | | |
| " | " 20 " " 23 | " | " 24 " " 5 | " | " 6 " " 11 | | |
| " | " 21 " " 24 | " | " 25 " " 6 | " | " 7 " " 12 | | |
| " | " 22 " " 25 | " | " 26 " " 7 | " | " 8 " " 13 | | |
| " | " 23 " " 26 | " | " 27 " " 8 | " | " 9 " " 14 | | |
| " | " 24 " " 27 | " | " 28 " " 9 | " | " 10 " " 15 | | |
| " | " 25 " " 28 | " | " 29 " " 10 | " | " 11 " " 16 | | |
| " | " 26 " " 29 | " | " 30 " " 11 | " | " 12 " " 17 | | |
| " | " 27 " " 30 | " | " 31 " " 12 | " | " 13 " " 18 | | |
| " | " 28 " " 31 | " | June 1 " " 13 | " | " 14 " " 19 | | |
| " | " 29 " June 1 | " | " 2 " " 14 | " | " 15 " " 20 | | |
| " | " 30 " " 2 | " | " 3 " " 15 | " | " 16 " " 21 | | |
| " | " 31 " " 3 | " | " 4 " " 16 | " | " 17 " " 22 | | |
| " | June 1 " " 4 | " | " 5 " " 17 | " | " 18 " " 23 | | |
| " | " 2 " " 5 | " | " 6 " " 18 | " | " 19 " " 24 | | |
| " | " 3 " " 6 | " | " 7 " " 19 | " | " 20 " " 25 | | |
| " | " 4 " " 7 | " | " 8 " " 20 | " | " 21 " " 26 | | |
| " | " 5 " " 8 | " | " 9 " " 21 | " | " 22 " " 27 | | |
| " | " 6 " " 9 | " | " 10 " " 22 | " | " 23 " " 28 | | |
| " | " 7 " " 10 | " | " 11 " " 23 | " | " 24 " " 29 | | |
| " | " 8 " " 11 | " | " 12 " " 24 | " | " 25 " " 30 | | |
| " | " 9 " " 12 | " | " 13 " " 25 | " | " 26 " July 1 | | |
| " | " 10 " " 13 | " | " 14 " " 26 | " | " 27 " " 2 | | |
| " | " 11 " " 14 | " | " 15 " " 27 | " | " 28 " " 3 | | |
| " | " 12 " " 15 | " | " 16 " " 28 | " | " 29 " " 4 | | |
| " | " 13 " " 16 | " | " 17 " " 29 | " | " 30 " " 5 | | |
| " | " 14 " " 17 | " | " 18 " " 30 | " | July 1 " " 6 | | |
| " | " 15 " " 18 | " | " 19 " July 1 | " | " 2 " " 7 | | |
| " | " 16 " " 19 | " | " 20 " " 2 | " | " 3 " " 8 | | |
| " | " 17 " " 20 | " | " 21 " " 3 | " | " 4 " " 9 | | |
| " | " 18 " " 21 | " | " 22 " " 4 | " | " 5 " " 10 | | |
| " | " 19 " " 22 | " | " 23 " " 5 | " | " 6 " " 11 | | |
| " | " 20 " " 23 | " | " 24 " " 6 | " | " 7 " " 12 | | |
| " | " 21 " " 24 | " | " 25 " " 7 | " | " 8 " " 13 | | |
| " | " 22 " " 25 | " | " 26 " " 8 | " | " 9 " " 14 | | |
| " | " 23 " " 26 | " | " 27 " " 9 | " | " 10 " " 15 | | |
| " | " 24 " " 27 | " | " 28 " " 10 | " | " 11 " " 16 | | |
| " | " 25 " " 28 | " | " 29 " " 11 | " | " 12 " " 17 | | |
| " | " 26 " " 29 | " | " 30 " " 12 | " | " 13 " " 18 | | |
| " | " 27 " " 30 | " | July 1 " " 13 | " | " 14 " " 19 | | |
| " | " 28 July 1 | " | " 2 " " 14 | " | " 15 " " 20 | | |
| " | " 29 " " 2 | " | " 3 " " 15 | " | " 16 " " 21 | | |
| " | " 30 " " 3 | " | " 4 " " 16 | " | " 17 " " 22 | | |
| " | July 1 " " 4 | " | " 5 " " 17 | " | " 18 " " 23 | | |
| " | " 2 " " 5 | " | " 6 " " 18 | " | " 19 " " 24 | | |
| " | " 3 " " 6 | " | " 7 " " 19 | " | " 20 " " 25 | | |
| " | " 4 " " 7 | " | " 8 " " 20 | " | " 21 " " 26 | | |
| " | " 5 " " 8 | " | " 9 " " 21 | " | " 22 " " 27 | | |
| " | " 6 " " 9 | " | " 10 " " 22 | " | " 23 " " 28 | | |

| MONTHLY PERIOD | | | | CONCEPTION PERIOD | | | BARREN PERIOD | | | |
|----------------|------|-----------|--------|-------------------|-----------------|---------|---------------|-----------------|---------|--|
| From | July | 7 to July | 10 | From | July 11 to July | 23 | From | July 24 to July | 29 | |
| " | " | 8 " | " 11 | " | " 12 " | " 24 | " | " 25 " | " 30 | |
| " | " | 9 " | " 12 | " | " 13 " | " 25 | " | " 26 " | " 31 | |
| " | " | 10 " | " 13 | " | " 14 " | " 26 | " | " 27 " | Aug. 1 | |
| " | " | 11 " | " 14 | " | " 15 " | " 27 | " | " 28 " | " 2 | |
| " | " | 12 " | " 15 | " | " 16 " | " 28 | " | " 29 " | " 3 | |
| " | " | 13 " | " 16 | " | " 17 " | " 29 | " | " 30 " | " 4 | |
| " | " | 14 " | " 17 | " | " 18 " | " 30 | " | " 31 " | " 5 | |
| " | " | 15 " | " 18 | " | " 19 " | " 31 | " | Aug. 1 " | " 6 | |
| " | " | 16 " | " 19 | " | " 20 " | Aug. 1 | " | " 2 " | " 7 | |
| " | " | 17 " | " 20 | " | " 21 " | " 2 | " | " 3 " | " 8 | |
| " | " | 18 " | " 21 | " | " 22 " | " 3 | " | " 4 " | " 9 | |
| " | " | 19 " | " 22 | " | " 23 " | " 4 | " | " 5 " | " 10 | |
| " | " | 20 " | " 23 | " | " 24 " | " 5 | " | " 6 " | " 11 | |
| " | " | 21 " | " 24 | " | " 25 " | " 6 | " | " 7 " | " 12 | |
| " | " | 22 " | " 25 | " | " 26 " | " 7 | " | " 8 " | " 13 | |
| " | " | 23 " | " 26 | " | " 27 " | " 8 | " | " 9 " | " 14 | |
| " | " | 24 " | " 27 | " | " 28 " | " 9 | " | " 10 " | " 15 | |
| " | " | 25 " | " 28 | " | " 29 " | " 10 | " | " 11 " | " 16 | |
| " | " | 26 " | " 29 | " | " 30 " | " 11 | " | " 12 " | " 17 | |
| " | " | 27 " | " 30 | " | " 31 " | " 12 | " | " 13 " | " 18 | |
| " | " | 28 " | " 31 | " | Aug. 1 " | " 13 | " | " 14 " | " 19 | |
| " | " | 29 " | Aug. 1 | " | " 2 " | " 14 | " | " 15 " | " 20 | |
| " | " | 30 " | " 2 | " | " 3 " | " 15 | " | " 16 " | " 21 | |
| " | " | 31 " | " 3 | " | " 4 " | " 16 | " | " 17 " | " 22 | |
| " | Aug. | 1 " | " 4 | " | " 5 " | " 17 | " | " 18 " | " 23 | |
| " | " | 2 " | " 5 | " | " 6 " | " 18 | " | " 19 " | " 24 | |
| " | " | 3 " | " 6 | " | " 7 " | " 19 | " | " 20 " | " 25 | |
| " | " | 4 " | " 7 | " | " 8 " | " 20 | " | " 21 " | " 26 | |
| " | " | 5 " | " 8 | " | " 9 " | " 21 | " | " 22 " | " 27 | |
| " | " | 6 " | " 9 | " | " 10 " | " 22 | " | " 23 " | " 28 | |
| " | " | 7 " | " 10 | " | " 11 " | " 23 | " | " 24 " | " 29 | |
| " | " | 8 " | " 11 | " | " 12 " | " 24 | " | " 25 " | " 30 | |
| " | " | 9 " | " 12 | " | " 13 " | " 25 | " | " 26 " | " 31 | |
| " | " | 10 " | " 13 | " | " 14 " | " 26 | " | " 27 " | Sept. 1 | |
| " | " | 11 " | " 14 | " | " 15 " | " 27 | " | " 28 " | " 2 | |
| " | " | 12 " | " 15 | " | " 16 " | " 28 | " | " 29 " | " 3 | |
| " | " | 13 " | " 16 | " | " 17 " | " 29 | " | " 30 " | " 4 | |
| " | " | 14 " | " 17 | " | " 18 " | " 30 | " | " 31 " | " 5 | |
| " | " | 15 " | " 18 | " | " 19 " | " 31 | " | Sept. 1 " | " 6 | |
| " | " | 16 " | " 19 | " | " 20 " | Sept. 1 | " | " 2 " | " 7 | |
| " | " | 17 " | " 20 | " | " 21 " | " 2 | " | " 3 " | " 8 | |
| " | " | 18 " | " 21 | " | " 22 " | " 3 | " | " 4 " | " 9 | |
| " | " | 19 " | " 22 | " | " 23 " | " 4 | " | " 5 " | " 10 | |
| " | " | 20 " | " 23 | " | " 24 " | " 5 | " | " 6 " | " 11 | |
| " | " | 21 " | " 24 | " | " 25 " | " 6 | " | " 7 " | " 12 | |
| " | " | 22 " | " 25 | " | " 26 " | " 7 | " | " 8 " | " 13 | |
| " | " | 23 " | " 26 | " | " 27 " | " 8 | " | " 9 " | " 14 | |
| " | " | 24 " | " 27 | " | " 28 " | " 9 | " | " 10 " | " 15 | |
| " | " | 25 " | " 28 | " | " 29 " | " 10 | " | " 11 " | " 16 | |

| MONTHLY PERIOD | | CONCEPTION PERIOD | | BARREN PERIOD | |
|----------------|--------------------|-------------------|---------------------|---------------|----------------------|
| From | Aug. 26 to Aug. 29 | From | Aug. 30 to Sept. 11 | From | Sept. 12 to Sept. 17 |
| " | " 27 " " 30 | " | " 31 " " 12 | " | " 13 " " 18 |
| " | " 28 " " 31 | " | Sept. 1 " " 13 | " | " 14 " " 19 |
| " | " 29 " Sept. 1 | " | " 2 " " 14 | " | " 15 " " 20 |
| " | " 30 " " 2 | " | " 3 " " 15 | " | " 16 " " 21 |
| " | " 31 " " 3 | " | " 4 " " 16 | " | " 17 " " 22 |
| " | Sept. 1 " " 4 | " | " 5 " " 17 | " | " 18 " " 23 |
| " | " 2 " " 5 | " | " 6 " " 18 | " | " 19 " " 24 |
| " | " 3 " " 6 | " | " 7 " " 19 | " | " 20 " " 25 |
| " | " 4 " " 7 | " | " 8 " " 20 | " | " 21 " " 26 |
| " | " 5 " " 8 | " | " 9 " " 21 | " | " 22 " " 27 |
| " | " 6 " " 9 | " | " 10 " " 22 | " | " 23 " " 28 |
| " | " 7 " " 10 | " | " 11 " " 23 | " | " 24 " " 29 |
| " | " 8 " " 11 | " | " 12 " " 24 | " | " 25 " " 30 |
| " | " 9 " " 12 | " | " 13 " " 25 | " | " 26 " Oct. 1 |
| " | " 10 " " 13 | " | " 14 " " 26 | " | " 27 " " 2 |
| " | " 11 " " 14 | " | " 15 " " 27 | " | " 28 " " 3 |
| " | " 12 " " 15 | " | " 16 " " 28 | " | " 29 " " 4 |
| " | " 13 " " 16 | " | " 17 " " 29 | " | " 30 " " 5 |
| " | " 14 " " 17 | " | " 18 " " 30 | " | Oct. 1 " " 6 |
| " | " 15 " " 18 | " | " 19 " Oct. 1 | " | " 2 " " 7 |
| " | " 16 " " 19 | " | " 20 " " 2 | " | " 3 " " 8 |
| " | " 17 " " 20 | " | " 21 " " 3 | " | " 4 " " 9 |
| " | " 18 " " 21 | " | " 22 " " 4 | " | " 5 " " 10 |
| " | " 19 " " 22 | " | " 23 " " 5 | " | " 6 " " 11 |
| " | " 20 " " 23 | " | " 24 " " 6 | " | " 7 " " 12 |
| " | " 21 " " 24 | " | " 25 " " 7 | " | " 8 " " 13 |
| " | " 22 " " 25 | " | " 26 " " 8 | " | " 9 " " 14 |
| " | " 23 " " 26 | " | " 27 " " 9 | " | " 10 " " 15 |
| " | " 24 " " 27 | " | " 28 " " 10 | " | " 11 " " 16 |
| " | " 25 " " 28 | " | " 29 " " 11 | " | " 12 " " 17 |
| " | " 26 " " 29 | " | " 30 " " 12 | " | " 13 " " 18 |
| " | " 27 " " 30 | " | Oct. 1 " " 13 | " | " 14 " " 19 |
| " | " 28 " Oct. 1 | " | " 2 " " 14 | " | " 15 " " 20 |
| " | " 29 " " 2 | " | " 3 " " 15 | " | " 16 " " 21 |
| " | " 30 " " 3 | " | " 4 " " 16 | " | " 17 " " 22 |
| " | Oct. 1 " " 4 | " | " 5 " " 17 | " | " 18 " " 23 |
| " | " 2 " " 5 | " | " 6 " " 18 | " | " 19 " " 24 |
| " | " 3 " " 6 | " | " 7 " " 19 | " | " 20 " " 25 |
| " | " 4 " " 7 | " | " 8 " " 20 | " | " 21 " " 26 |
| " | " 5 " " 8 | " | " 9 " " 21 | " | " 22 " " 27 |
| " | " 6 " " 9 | " | " 10 " " 22 | " | " 23 " " 28 |
| " | " 7 " " 10 | " | " 11 " " 23 | " | " 24 " " 29 |
| " | " 8 " " 11 | " | " 12 " " 24 | " | " 25 " " 30 |
| " | " 9 " " 12 | " | " 13 " " 25 | " | " 26 " " 31 |
| " | " 10 " " 13 | " | " 14 " " 26 | " | " 27 " Nov. 1 |
| " | " 11 " " 14 | " | " 15 " " 27 | " | " 28 " " 2 |
| " | " 12 " " 15 | " | " 16 " " 28 | " | " 29 " " 3 |
| " | " 13 " " 16 | " | " 17 " " 29 | " | " 30 " " 4 |
| " | " 14 " " 17 | " | " 18 " " 30 | " | " 31 " " 5 |

| MONTHLY PERIOD | | | CONCEPTION PERIOD | | | BARREN PERIOD | | |
|----------------|------------|---------|-------------------|------------|---------|---------------|-----------|--------|
| From | Oct. 15 to | Oct. 18 | From | Oct. 19 to | Oct. 31 | From | Nov. 1 to | Nov. 6 |
| " | " | 16 " | " | " | 20 " | " | " | 2 " |
| " | " | 17 " | " | " | 21 " | " | " | 3 " |
| " | " | 18 " | " | " | 22 " | " | " | 4 " |
| " | " | 19 " | " | " | 23 " | " | " | 5 " |
| " | " | 20 " | " | " | 24 " | " | " | 6 " |
| " | " | 21 " | " | " | 25 " | " | " | 7 " |
| " | " | 22 " | " | " | 26 " | " | " | 8 " |
| " | " | 23 " | " | " | 27 " | " | " | 9 " |
| " | " | 24 " | " | " | 28 " | " | " | 10 " |
| " | " | 25 " | " | " | 29 " | " | " | 11 " |
| " | " | 26 " | " | " | 30 " | " | " | 12 " |
| " | " | 27 " | " | " | 31 " | " | " | 13 " |
| " | " | 28 " | " | Nov. | 1 " | " | " | 14 " |
| " | " | 29 " | " | " | 2 " | " | " | 15 " |
| " | " | 30 " | " | " | 3 " | " | " | 16 " |
| " | " | 31 " | " | " | 4 " | " | " | 17 " |
| " | Nov. | 1 " | " | " | 5 " | " | " | 18 " |
| " | " | 2 " | " | " | 6 " | " | " | 19 " |
| " | " | 3 " | " | " | 7 " | " | " | 20 " |
| " | " | 4 " | " | " | 8 " | " | " | 21 " |
| " | " | 5 " | " | " | 9 " | " | " | 22 " |
| " | " | 6 " | " | " | 10 " | " | " | 23 " |
| " | " | 7 " | " | " | 11 " | " | " | 24 " |
| " | " | 8 " | " | " | 12 " | " | " | 25 " |
| " | " | 9 " | " | " | 13 " | " | " | 26 " |
| " | " | 10 " | " | " | 14 " | " | " | 27 " |
| " | " | 11 " | " | " | 15 " | " | " | 28 " |
| " | " | 12 " | " | " | 16 " | " | " | 29 " |
| " | " | 13 " | " | " | 17 " | " | " | 30 " |
| " | " | 14 " | " | " | 18 " | " | Dec. | 1 " |
| " | " | 15 " | " | " | 19 " | " | " | 2 " |
| " | " | 16 " | " | " | 20 " | " | " | 3 " |
| " | " | 17 " | " | " | 21 " | " | " | 4 " |
| " | " | 18 " | " | " | 22 " | " | " | 5 " |
| " | " | 19 " | " | " | 23 " | " | Dec. | 1 " |
| " | " | 20 " | " | " | 24 " | " | " | 2 " |
| " | " | 21 " | " | " | 25 " | " | " | 3 " |
| " | " | 22 " | " | " | 26 " | " | " | 4 " |
| " | " | 23 " | " | " | 27 " | " | " | 5 " |
| " | " | 24 " | " | " | 28 " | " | " | 6 " |
| " | " | 25 " | " | " | 29 " | " | " | 7 " |
| " | " | 26 " | " | " | 30 " | " | " | 8 " |
| " | " | 27 " | " | " | 1 " | " | " | 9 " |
| " | " | 28 " | " | Dec. | 2 " | " | " | 10 " |
| " | " | 29 " | " | " | 3 " | " | " | 11 " |
| " | " | 30 " | " | " | 4 " | " | " | 12 " |
| " | " | 1 " | " | " | 5 " | " | " | 13 " |
| " | " | 2 " | " | " | 6 " | " | " | 14 " |
| " | " | 3 " | " | " | 7 " | " | " | 15 " |
| " | " | 4 " | " | " | 8 " | " | " | 16 " |
| " | " | 5 " | " | " | 9 " | " | " | 17 " |
| " | " | 6 " | " | " | 10 " | " | " | 18 " |
| " | " | 7 " | " | " | 11 " | " | " | 19 " |
| " | " | 8 " | " | " | 12 " | " | " | 20 " |
| " | " | 9 " | " | " | 13 " | " | " | 21 " |
| " | " | 10 " | " | " | 14 " | " | " | 22 " |
| " | " | 11 " | " | " | 15 " | " | " | 23 " |
| " | " | 12 " | " | " | 16 " | " | " | 24 " |
| " | " | 13 " | " | " | 17 " | " | " | 25 " |
| " | " | 14 " | " | " | 18 " | " | " | 26 " |
| " | " | 15 " | " | " | 19 " | " | " | 27 " |
| " | " | 16 " | " | " | 20 " | " | " | 28 " |
| " | " | 17 " | " | " | 21 " | " | " | 29 " |
| " | " | 18 " | " | " | 22 " | " | " | 30 " |
| " | " | 19 " | " | " | 23 " | " | " | 1 " |
| " | " | 20 " | " | " | 24 " | " | " | 2 " |
| " | " | 21 " | " | " | 25 " | " | " | 3 " |
| " | " | 22 " | " | " | 26 " | " | " | 4 " |
| " | " | 23 " | " | " | 27 " | " | " | 5 " |
| " | " | 24 " | " | " | 28 " | " | " | 6 " |
| " | " | 25 " | " | " | 29 " | " | " | 7 " |
| " | " | 26 " | " | " | 30 " | " | " | 8 " |
| " | " | 27 " | " | " | 1 " | " | " | 9 " |
| " | " | 28 " | " | Dec. | 2 " | " | " | 10 " |
| " | " | 29 " | " | " | 3 " | " | " | 11 " |
| " | " | 30 " | " | " | 4 " | " | " | 12 " |

| MONTHLY PERIOD | | | | CONCEPTION PERIOD | | | | BARREN PERIOD | | | |
|----------------|------|------|--------|-------------------|------|------|---------|---------------|------|-------|---------|
| From | Dec. | 1 to | Dec. 4 | From | Dec. | 5 to | Dec. 17 | From | Dec. | 18 to | Dec. 23 |
| " | " | 2 | " 5 | " | " | 6 | " 18 | " | " | 19 | " 24 |
| " | " | 3 | " 6 | " | " | 7 | " 19 | " | " | 20 | " 25 |
| " | " | 4 | " 7 | " | " | 8 | " 20 | " | " | 21 | " 26 |
| " | " | 5 | " 8 | " | " | 9 | " 21 | " | " | 22 | " 27 |
| " | " | 6 | " 9 | " | " | 10 | " 22 | " | " | 23 | " 28 |
| " | " | 7 | " 10 | " | " | 11 | " 23 | " | " | 24 | " 29 |
| " | " | 8 | " 11 | " | " | 12 | " 24 | " | " | 25 | " 30 |
| " | " | 9 | " 12 | " | " | 13 | " 25 | " | " | 26 | " 31 |
| " | " | 10 | " 13 | " | " | 14 | " 26 | " | " | 27 | Jan. 1 |
| " | " | 11 | " 14 | " | " | 15 | " 27 | " | " | 28 | " 2 |
| " | " | 12 | " 15 | " | " | 16 | " 28 | " | " | 29 | " 3 |
| " | " | 13 | " 16 | " | " | 17 | " 29 | " | " | 30 | " 4 |
| " | " | 14 | " 17 | " | " | 18 | " 30 | " | " | 31 | " 5 |
| " | " | 15 | " 18 | " | " | 19 | " 31 | " | Jan. | 1 | " 6 |
| " | " | 16 | " 19 | " | " | 20 | Jan. 1 | " | " | 2 | " 7 |
| " | " | 17 | " 20 | " | " | 21 | " 2 | " | " | 3 | " 8 |
| " | " | 18 | " 21 | " | " | 22 | " 3 | " | " | 4 | " 9 |
| " | " | 19 | " 22 | " | " | 23 | " 4 | " | " | 5 | " 10 |
| " | " | 20 | " 23 | " | " | 24 | " 5 | " | " | 6 | " 11 |
| " | " | 21 | " 24 | " | " | 25 | " 6 | " | " | 7 | " 12 |
| " | " | 22 | " 25 | " | " | 26 | " 7 | " | " | 8 | " 13 |
| " | " | 23 | " 26 | " | " | 27 | " 8 | " | " | 9 | " 14 |
| " | " | 24 | " 27 | " | " | 28 | " 9 | " | " | 10 | " 15 |
| " | " | 25 | " 28 | " | " | 29 | " 10 | " | " | 11 | " 16 |
| " | " | 26 | " 29 | " | " | 30 | " 11 | " | " | 12 | " 17 |
| " | " | 27 | " 30 | " | " | 31 | " 12 | " | " | 13 | " 18 |
| " | " | 28 | " 31 | " | Jan. | 1 | " 13 | " | " | 14 | " 19 |
| " | " | 29 | Jan. 1 | " | " | 2 | " 14 | " | " | 15 | " 20 |
| " | " | 30 | " 2 | " | " | 3 | " 15 | " | " | 16 | " 21 |
| " | " | 31 | " 3 | " | " | 4 | " 16 | " | " | 17 | " 22 |

PAINLESS PREGNANCY AND CHILD-BIRTH.

Some excellent popular volumes have been largely devoted to directions how to secure a comfortable period of pregnancy and painless delivery. After much conning of these worthy efforts to impress a little common sense upon the sisterhood, we are convinced that all may be summed up under the simple heads of: (1) An unconfined and lightly burdened waist; (2) moderate but persistent outdoor exercise, of which walking is the best form; (3) a plain, unstimulating, chiefly fruit and vegetable diet; (4) little or no intercourse during the time.

These are hygienic rules of benefit under any ordinary conditions; yet they are violated by almost every pregnant lady. If they are followed, biliousness, indigestion, consti-

pation, swollen limbs, morning sickness and nausea, all will absent themselves or be much lessened.

A GRADUAL REFORM.

We do not claim, with some authors, that the effects of heredity from the misdeeds of our ancestry can be obviated or reformed in one generation. All reforms, whether moral or physical, take *time* for accomplishment. But it is the duty of every human being to contribute in his or her own person as much as may be to the building up of the strength and beauty of the race.

In pregnancy, more than at any other time, corsets are injurious. The waist and abdomen must be allowed to expand freely with the growth of the child. The great process of *evolution* must have room.

PROGRESS OF THE EMBRYO.

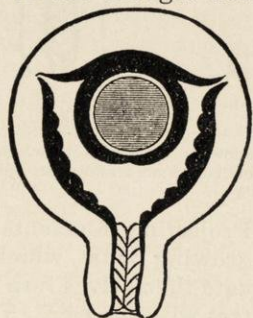
Among the strange mysteries of human life, there are few subjects more interesting to the student than the development of the embryo. Commencing with the changes that



Impregnated Uterus,
Showing the formation of Decidua. The Decidua is represented in black; and the Egg is seen at the Fundus of the Uterus, engaged between two of its projecting convolutions.



Appearance of Egg at Fourteenth Day.



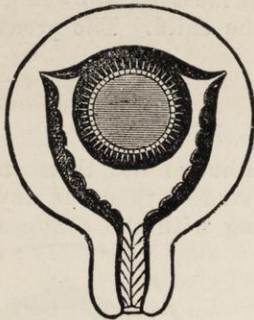
Impregnated Uterus,
Showing how the projecting folds of the Decidua have grown up around and completely inclosed the Egg.

take place in the womb upon the entrance therein of the impregnated egg or ovum, it has been found that the mucous membrane of that organ increases in thickness, and its blood-vessels enlarge and multiply, until a thick, rich, soft, vel-

vety and vascular lining membrane is formed, presenting numerous tubules and convolutions. The impregnated egg, on entering the body of the womb, is lodged in one of the projecting convolutions. Once having secured lodgment there, the mucous membrane surrounding it takes on a very rapid development, a new growth as it were, and finally surrounds and shuts off the egg from the rest of the uterus.

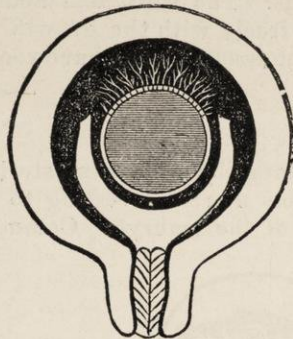
CHANGES OF THE MEMBRANE.

This new growth of the mucous membrane is known as the *decidua reflexa*, while the original lining membrane of the uterus, before this great change, is called the *decidua vera*.



Impregnated Uterus,

Showing connection between villousities of Chorion and Decidual Membranes.



Pregnant Uterus,

Showing formation of Placenta, by the united development of a portion of the Decidua and the villousities of the Chorion.

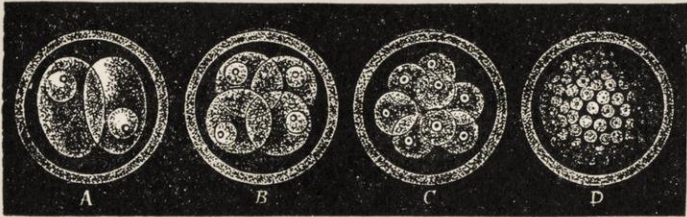
Projecting filaments are soon thrown out by the rapidly growing ovum, which, spreading out in all directions, insinuate themselves into the folds of the decidual surface in contact with the egg. These filaments, as the egg continues to grow, disappear from the greater portion of its surface, while they become concentrated and developed at the situation of the future placenta.

The female germ-cell or egg, after being impregnated by the male sperm-cell or spermatozoon, is known as the *embryonic cell*. It consists of a *vitellus*, or *yelk*, and its cover, called the *vitelline membrane*. The process by which this simple globular mass of albuminous matter and oil granules (such being the composition of the vitellus), is changed into an or-

ganized structure, is a most remarkable one, and it is this we shall now very briefly consider.

After the spermatozoa encounter the ripe ovum and conception has taken place, a round *nucleus* appears in the centre of the vitellus of the ovum. Now comes the process of what is known as *segmentation*, which, in the language of Prof. Dalton, may be described as follows:

“Shortly after its formation, this nucleus subdivides into



Segmentation of the Ovum.

A, The Ovum divided into two Cells; B, the two Cells divided into four; C, The four Cells divided into eight; D, The Ovum has become a round, mulberry-shaped mass.

two nuclei, and, by a similar process of cleavage, the vitellus itself separates into halves. Almost at the same time, another furrow, running at right angles with the first, penetrates also the substance of the vitellus, and cuts it in a transverse direction. The vitellus is thus divided into *four* equal portions, the edges and angles of which are rounded off, and which are still contained within the cavity of the vitelline membrane. The spaces between them, and the internal surface of the vitelline membrane, are occupied by a transparent fluid. The process thus commenced goes on by a successive formation of furrows and sections in various directions. The four vitelline segments already produced are thus subdivided into *sixteen*, the sixteen into *sixty-four*, and so on, until the whole vitellus is connected into a mulberry-shaped mass, composed of minute, nearly spherical bodies, which are called the *vitelline spheres*. The vitelline spheres have a somewhat firmer consistency than the original substance of the vitellus, and this consistency appears to increase as they successively multiply in numbers and diminish in size. At last they become so abundant as to be closely crowded together, compressed into polygonal

forms, and flattened against the internal surface of the vitelline membrane. They have, by this time, been converted into true animal cells, and these cells, adhering to each other by their adjacent edges, form a continuous organized membrane, which is termed the *blastodermic membrane*."

At this point in the progress of development appears the first sign of distinct organization; for the blastodermic membrane is made up of fully formed anatomical elements. It is, indeed, the body of the fœtus, which, though at this time exceedingly simple in structure, will nevertheless give rise, by development of its varied parts, to all the future organs of the body.

THE PROCESS OF ORGANIZATION.

The blastodermic membrane, in the course of the changes which take place in it, is divided into two layers, known as the *external* and *internal layers*. These are, as yet, composed exclusively of cells; the cells of the internal layer being usually small and compact, while those of the external layer are rather larger and less compact in texture.

The egg may now be described as having the appearance of a globular sac, the wall of which consists of three concentric layers, lying in contact with and enclosing each other; namely, *first*, the structureless vitelline membrane, on the outside; *second*, the external layer of the blastodermic membrane, composed of cells; and, *third*, the internal layer of the blastodermic membrane, also composed of cells. A transparent fluid occupies the cavity of the egg.

Following the process of development we find the two layers of this important membrane undergoing some very remarkable changes. The external layer produces the spinal column and all the organs of animal life; while the internal layer produces the intestinal canal and all the organs of vegetative life.

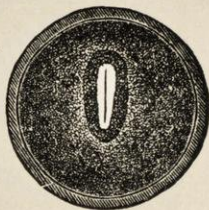
"The first sign of advancing organization in the external layer of the blastodermic membrane, shows itself in a thickening and condensation of its structure. This thickened portion has the form of an elongated, oval-shaped spot, termed the *embryonic spot*, the wide edges of which are somewhat more opaque than the rest of the blastodermic membrane. Inclosed within these opaque edges is a narrower,

colorless, and transparent space, the *area pellucida*, and in its centre is a delicate line or furrow running longitudinally from front to rear, which is called the *primitive trace*.

“On each side of the primitive trace, in the *area pellucida*, the substance of the blastodermic membrane rises up in such a manner as to form two nearly parallel vertical plates or ridges, which approach each other over the dorsal aspect of the fœtus, and are therefore called the *dorsal plates*. They at last meet on the median line, so as to inclose the furrow above described, and convert it into a canal. This afterward becomes the spinal canal, and in its cavity is formed the spinal cord by a deposit of nerve matter upon its internal surface. At the anterior extremity of this canal its cavity is large and rounded, to accommodate the brain and medulla oblongata; at its posterior extremity it is narrow and pointed, and contains the extremity of the spinal cord.”

As the growth of the embryo continues, two very important organs are formed, known as the *amnion* and *allantois*. The former of these, the amnion, which envelops the embryo and secretes from its inner surface the liquid in which is suspended the fœtus during the whole period of gestation, is formed from the external layer of the blastodermic membrane. The allantois is formed from the inner layer of the blastodermic membrane. When fully developed it entirely surrounds the fœtus, and unites with the vitelline membrane and outer lamina of the amniotic fold; it is then termed the *chorion* and thus becomes the sole outer membrane of the egg.

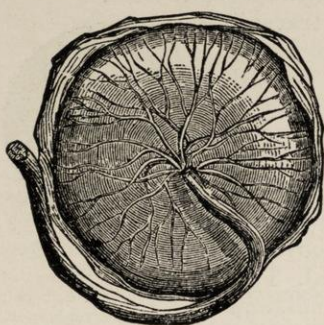
In one of our cuts may be seen the ovum at the end of thirty days. In the middle of the amniotic fluid is seen the umbilical vesicle, which contains the fluid for the first nourishment of the embryo. In time this is absorbed, and the sac gradually disappears after the third month. The amnion is seen in the next engraving, secreting the fluid in which the fœtus floats. The chorion may also be seen, on which are the *villi* carrying nourishment to the embryo. About the end of the seventh month the decidua vera and the decidua reflexa fuse together and the two become a single thin layer.



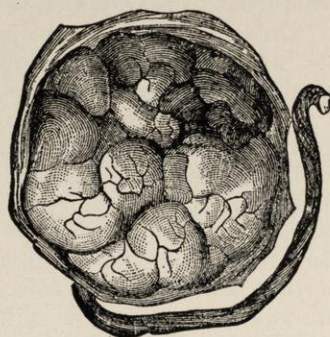
Impregnated Egg,

With commencement of formation of embryo; showing embryonic spot, *area pellucida*, and primitive trace.

During the first weeks of the growth of the embryo it is nourished in a similar manner to the young chick, by the yelk



Maternal Side of Placenta.



Fœtal Side of Placenta.

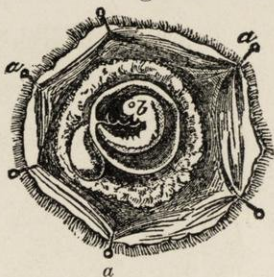
of the egg. In a short time, however, the villi of the chorion gather into a compact mass, and become adherent to some portion of the inner surface of the womb. The placenta is then formed, composed of two portions—the maternal side or that toward the walls of the womb, and the fœtal side in which the vessels unite into two arteries and one vein, which, with their envelopments, form the umbilical cord and communicate with the fœtal heart. The vein carries red, arterial, nutritive blood from the placenta to the child, to be sent to all parts of its system. The two arteries carry the dark, venous blood from the child back again to the placenta, there to be purified and renewed. The placenta does not constitute a part of either mother or child, being formed only for temporary use. What is commonly known as the *after-birth* is formed of the placenta, the umbilical cord, and the membrane of the ovum.



*Embryo of 12
to 14 days
laid open.*

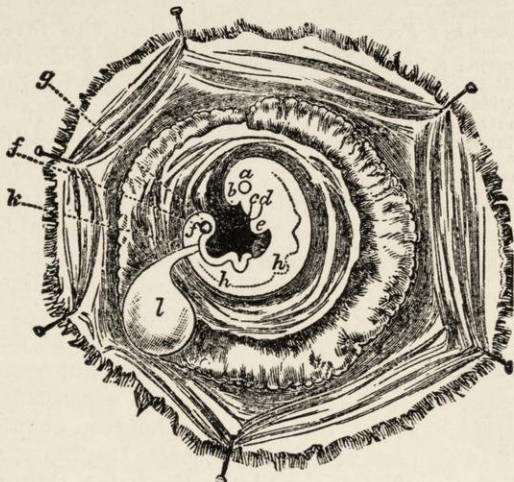
After fecundation of the egg its growth is very rapid. Before the *seventh day* there is nothing in the uterus to indicate a new being, the ovum probably having not yet passed from the Fallopian tube. On the *tenth day* a semi-transparent, grayish flake of no definite form, may be observed. On the *fourteenth day* the egg is nearly the size of a pea; it contains a thick fluid, in the midst of which is an opaque spot, being

the first evidence of an embryo, or new being, surrounded by the amnion and chorion; weight, about one grain. On the *twenty-first day* the embryo resembles in form a large ant; many of its parts now begin to form; weight, about four grains. On the *thirtieth day* the embryo is as large as a horse-fly. The head is larger than the rest of the body, and spots indicating the eyes may be seen; weight, twelve grains; length, one inch. On the *forty-fifth day* the body of the embryo is considerably lengthened, while the eyes, nose and mouth are strongly marked; weight, about sixty grains. At *sixty days* or *two months*, the embryo is from one and a half to two inches long, the head forming more than one-third of



Embryo of Twenty-one Days Laid Open.

a, a, a, Chorion laid open and secured by pins; *b,* the Embryo with Amnion laid open.

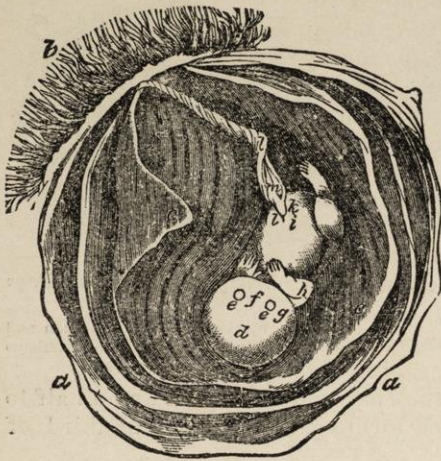


Embryo of Thirty Days.

a, Head of Embryo; *b,* the Eyes; *c,* the Mouth; *d,* the Neck; *e,* the Thorax; *f,* the Abdomen; *g,* the extremity of Spine; *h, h,* the Spinal Arch; *k,* Neck of Umbilical Vesicle; *l,* the Vesicle.

the whole. Its sex is not yet easily distinguished; the heart is partially developed as well as the brain; weight, from

three to five drachms. At *three months* the embryo is quite developed. The organs of generation may be defined; the



Embryo of Forty-five Days.

a, a, a, Chorion; *b,* Villosities of Placenta; *c, e,* Amnion; *d,* Head of Embryo; *e,* Temples; *f,* Interval between Eyes or Root of Nose; *h,* the Arms; *i,* the Abdomen; *k,* the Sexual Organs; *l, l,* Umbilical Cord; *m,* the internal portion of Cord.

heart is quite plainly distinguished, beating with considerable force; the forehead and nose may be easily traced; muscles begin to develop; and the fingers and toes are well defined; weight, about two ounces and a half; length, about four inches. At the *fourth month* the embryo is perfect, but is no longer called by that name, being properly termed from this time the *fœtus*. The head and liver now, instead of increasing, decrease in size; a small quantity of meconium collects in the bowels, and the brain and spinal marrow become more consistent. The eyes, nostrils and mouth

are closed; the muscles are capable of motion; and the skin has a rosy color. Born at this period a fœtus might live several hours; weight, seven to eight ounces; length, six to eight inches. At *five months*, weight, eight to eleven ounces; length, eight to ten inches. At *six months*, weight, about one pound; length, about twelve inches. At *seven months* the bony system is almost complete; the fetus, if born at this period, may live to grow up, if properly cared for, as it is now able to breathe and take to the breast. Although its power of



Head of Human Embryo,

About the end of the second month.

generating heat within itself is extremely feeble, still it may survive its birth, if the requisite precautions are

taken; which means warm flannels, and the warmth of animal heat imparted to it from the nurse or its mother. No

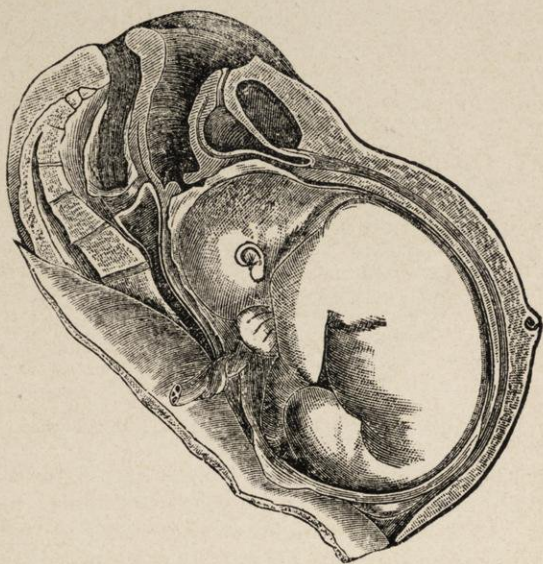


Embryo of Three Months Inclosed in the Amnion.

attempt should be made at this time at bathing and dressing; weight, about three pounds; length, from twelve to fourteen inches. At *eight months* the fœtus appears to grow in thickness rather than length. Its skin is red, and covered with a quantity of sebaceous matter; weight, four or five pounds; length, sixteen to eighteen inches. At *nine months*, or *full term*, the period of development has been reached at which the red blood circulates in the capillaries, and the skin performs its normal function of perspiration; average weight, from six to nine pounds; length, nineteen to twenty-three inches.

The entire period of intra-uterine growth having been completed, the fœtus lies in a curved position within the bag formed by the membranes; the head is usually bent, the chin resting on the breast; the legs are bent on the thighs, and the feet bent up in front of the legs; the knees are sep-

parated from each other, but the heels lie close together on the back part of the thighs; the arms are placed in such position that the chin may be received between the hands. Thus folded upon itself, the fœtus assumes an oval form, with a long diameter of about eleven inches. In the usual or normal position its face fronts nearly towards the mother's back at birth, and in about this attitude it is born; but



At Nine Months or Full Term.

numerous other positions are sometimes assumed by its body, thus taxing the skill of the physician to assist nature in the expulsion which may thereby be rendered more difficult. These various "presentations," as they are called, are too numerous to describe in a restricted work like this. It has now reached the time when it is forced to enter upon a very different stage of life, and when it must depend for its existence upon very different conditions; instead of the arterial blood from the mother continuing to directly support its life.

